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THE JUNIOR COLLEGE AS AN INTEGRAL PART OF THE PUBLIC-SCHOOL SYSTEM[1]

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The junior-college idea is in no sense a Procrustes-bed, and its advocates have nothing in common with that legendary highwayman of Attica; yet this bed suggests several very broad questions—questions inseparable from the junior-college movement as a whole. One is: Shall certain colleges have their heads cut off, and, if so, by whom? Another is: Shall the American university-college have its legs cut off, and, if so, where? The third is: Shall the American four-year high schools be stretched, and, if so, how? Now, it seemed wisest for me to relegate the first two of these questions and all that goes with them to the margin of consciousness and to focus attention on the junior college as an affirmative answer to the third and hence as a new member of an evolving public—or, more precisely, state—school system. In doing so I shall acquire merit, I hope, by drawing largely on California for object-lesson material, letting you, if you will, look after the *mutatis mutandis* applications.

We are not likely, I take it, to see the junior college "steadily and see it whole," unless we avoid entangling alliances with notions

[1] An address given at the conference of the University of Chicago with secondary schools, April 10, 1917.

and loyalties sprung from usage or with educational theory without a country, and choose, instead, as angle of vision, the common good of American democracy. From this point of view we cannot but be helpfully directed by the postulates and working principles implied. We start, then, with the idea that the school system is an organ of the body politic, bone of its bone, flesh of its flesh, an organ devised for each and all, from generation to generation. Its structure must needs therefore be shaped so that, as time goes on, more and more adequate recognition may be given to the educational rights of both the minority and the majority of child-citizens —that, in other words, provision may be made, not only for length and continuity, but also for breadth and completeness, of educational opportunities. Its supreme function accordingly becomes that of insuring, with increasing certainty, the greatest preparedness of the greatest number, the concept preparedness including, in this connection, becoming, doing, being, singly and collectively, but excluding whatever would degrade a human being to a mere means or device and would prevent the making of a life worthy of freemen. But to have it function thus continuously presupposes capacity for further and continuous development, for peaceful adaptations to new occasions and the new duties they teach. Otherwise it soon begins to minister to the quick as if they were the dead, and itself becomes a case of *rigor mortis*. To have it function thus continuously presupposes such correlation of parts as to reduce the danger of functional troubles to a minimum, provided this living unity in variety does not mean an enlightened despotism within or without, or lack of chances for a social group to make blunders, to get what it deserves, and so to learn to do better. Democracy's choice is like Lessing's choice of the search for truth rather than truth as a gift. The process of becoming efficient is to be preferred to efficiency for its own sake. It follows from all this that the school phases of social evolution can be adequately dealt with only by a state-schoolcraft that combines farsight and foresight with evolutional thought and practice. Not wanted is the conservatism of Lot's wife, the original "standpatter," nor the radicalism devoid of historic sense. What is wanted is, in a word, teleological opportunism, which has ample room for temperamental

differences as to speed. The etymological meaning of the term pedagogue needs to be Americanized into that of leading citizen, with the connotation that such a one is aggressively alive to the inherent purpose of democracy: to form a more perfect union of educational effort; to establish justice as to educational opportunities; to insure domestic tranquillity for the parts and the whole of the state's educational institutions; to provide for the common defense against all enemies of the child-citizen; to promote the general welfare, not by perverting young Americans into textbooks, papery inside and leathery outside, but by advancing them by means of school subjects and school life in preparedness as to personal freedom and loyal co-operative service.

When we fit the foregoing considerations into the general theory of education; when we thereupon examine those critics who think with their heads and thus give out light as well as heat; when we then watch the many adaptive changes going on and try to interpret their trend and significance, the need of reshaping the inherited school system—if an accident of history deserves to be called a system—into an organ adequate to the functions demanded by the twentieth century becomes convincingly obvious. Nor is it difficult then to project through the fixed points of the past and present the main lines of reconstruction and to arrive thereby at a rational hypothesis for direction and action—a hypothesis, moreover, that does not involve laying violent hands on anything but a few custom-caked prepossessions. Basing my best knowledge and belief largely on data derived from the situation I know best at first hand, I would read the shadows of coming events and sketch the completed readjustment and extension as follows:

1. The state university, embodying in a higher indissoluble union German and English university aims, rests on a foundation of fourteen grades of elementary and secondary education, its first two years corresponding to the last two of the four-year college. It retains the last two years of secondary education, but for a gradually diminishing number of students.

2. For city and country alike the elementary-school period ends with the sixth grade; not so, however, the period of compulsory school attendance.

3. For city and country alike the elementary grades are followed normally by three intermediate grades, designed for the years of early adolescence and adjusted to the educational needs of all pupils, be their school life long or short. For the country this presupposes the county as the unit of educational organization and administration.

4. For city and country alike provision has been made for education and training to the end of the secondary-school period, i.e., to the end of the fourteenth grade. Here again the county unit is presupposed.

5. The lower vocational system, comprising a variety of arrangements for training, is articulated with the intermediate school; the middle vocational system with the high school. To the middle vocational system belong the normal schools and the various vocational departments of junior colleges.

6. As far as the institutional grouping of the secondary grades is concerned, the old rigidity has been superseded by flexibility. One city or county, for example, may follow a 6-3-3-2 plan; another may have the grouping 6-2-4-2; a third may have a 6-4-4 division. According to local conditions, one community may have only the intermediate school, articulated, to be sure, with a high school elsewhere; another the intermediate and high-school grades, articulated, to be sure, with a junior college elsewhere; a third may provide for an eight-year secondary school in one place and under one management, and so on.

Being interested in reporting rather than arguing, I can do nothing at this point for the doubting Thomases or the Missourians. I can only affirm that in California, at any rate, the hypothesis or program thus crudely outlined accords essentially with professional public opinion. None other looks like something "just as good." If various committee reports and their acceptance by bodies of teachers may be trusted at all; if the attitude of the universities, particularly of their departments of education, is significant; if the policies of the state department mean anything for the future, substantial agreement exists as to the goal to be achieved. Whether it will be reached, and how soon, is, of course, a question concerning which one must heed Hosea Biglow's warning: "Don't prophesy

onless ye know." At present the omens are auspicious. The following glimpses of the situation may serve to illustrate this fact and at the same time bring to our minds the chief conditioning factors in the development of junior colleges.

1. To begin with, the intermediate school is being institutionalized city by city at a reasonable rate of speed. It is sanctioned by law and approved by the state board, which has provided for an intermediate teacher's certificate. Only a few counties have as yet availed themselves of their constitutional privilege to adopt charters, but the tendency is in that direction. It seems likely, moreover, that the rural intermediate school can be had sooner through specific mandatory legislation, making the county the unit of educational administration. The bearing of such legislation on the solution of rural-life problems is too obvious to be seen only by schoolmen.

2. The high schools of the state, now over 280 in number, have attained a stage of development that warrants an upward extension both in the larger cities and in the wealthier rural high-school districts. The state contributes $15 per pupil; each county $60 more. Less than 30 high schools have only 3 teachers; the average is about 12. For teachers of the traditional branches the standard of certification is one year of graduate university study, including professional training; for teachers of the newer special subjects, the equivalent of four years of preparation beyond the four-year high school. The state board has recently adopted a plan whereby all high-school teachers come under state supervision during the first two years of service.

3. It is coming to be generally understood that the attempts to pour the new wine of vocational training into the old skins of organization and method are destined to be futile. With this goes the growing conviction that the training for specialized efficiency cannot wisely be substituted for the general education for which the intermediate school and the high school must continue to stand. Foundation courses in both, yes; finishing courses, no; instead, vocational projections and continuations.

4. Since 1892 the state university has been gradually reshaping itself around two organizing ideas. One was and is that, for

theoretical and practical considerations alike, the university proper should begin in the middle of the inherited four-year college scheme; the second was and is that the work of the first two years is as a matter of history and fact all of a piece with secondary education. This trend of thought and preaching and practice resulted *gradatim* in the junior certificate, to mark the distinction between university and secondary education; in the policy of placing all professional schools on a basis of not less than two years of non-professional training; in making the studies of the last two years of the high school and the first two of the college largely interchangeable; and last, but not least, in publicly exhibiting the requirements for the junior certificate in terms of unified secondary curricula covering Grades 9–14, inclusive. In ways of her own, Leland Stanford Junior University, under the leadership first of Dr. Jordan and now of Dr. Wilbur, stands committed to virtually the same policy. Thus the precept and example of the two universities prepared the way for the collegiate extension of the public high school, and the junior colleges that have sprung into existence or will do so may rely on the continued support and co-operation of these two institutions.

5. The first junior colleges were established under the law of 1907, which gave high-school districts permission to introduce post-graduate courses. A year ago the State Council of Education adopted the following recommendations: (1) that the legislature explicitly recognize the junior college as an integral part of the secondary-school system; (2) that the legislature permit the establishment of a junior college only where the assessed valuation of taxable property is such as will support adequately, first of all, the elementary, the intermediate, and the traditional high-school grades, and, secondly, a two-year junior college—in other words, that the law safeguard the equitable distribution of money for educational purposes and prevent the multiplication of well-meant but doomed attempts at junior colleges; (3) that the legislature authorize counties to establish junior colleges, either as additions to existing county or district high schools or as separate institutions.

Bills embodying these recommendations have been drafted by the Commissioner of Secondary Education, and there is every reason

to believe that they will be enacted into law at the present session of the legislature. If so, several over-ambitious communities will have to be content with a policy of watchful waiting, but there will remain, as nearly as I can determine, about fifteen junior colleges that meet the legal requirements for their life, liberty, and happiness.

When we review the ground traversed thus far, the rise and progress of the junior college appears as an integral phase of a country-wide movement toward a more adequate state system of education. In California, as elsewhere, the junior college is causally connected with the other constituent phases of the whole process of reorganization. In California, as elsewhere, its evolution is determined by the convergence and coalescence of three currents of educational endeavor. The first is directed toward an intelligent adjustment of the university, in the Continental European sense, to the traditional American college. This process, it may be taken for granted, will result in the general absorption by the university of the last two years of the inherited four-year college. And this necessarily implies the practical recognition of the first two years as the continuation and culmination of secondary education. The second is directed toward making the high school function more effectively, for all alike, during the whole period of adolescence. Now the high school begins too late and ends too early. The result is a truncated and non-functioning education for most high-school graduates. The third is directed toward increasing the efficiency or preparedness of the nation through the creation of lower and middle systems of vocational training. For reasons too obvious to rehearse, the school must furnish such training, first, for those whose education for general social efficiency is not prolonged beyond the first eight or nine grades; secondly, for those whose general education ends with the eleventh or twelfth grade and who are not headed for one of the professions, in the restricted sense.

It is, of course, an inevitable phase of growth that as yet not one of the junior colleges I know about has fully found itself. Growing-pains cannot be escaped. Even a butterfly has to spend its infancy and youth as a caterpillar. But even now the uncertainties that

exist relate rather to ways and means than to fundamental conception and aim. The coming of the junior college means that the high school is taking possession of its own, the university-college continuing—presumably for many years to come—to give two years of secondary education also. Accordingly, the junior college, in order to promote the general welfare, which is the sole reason for its existence, cannot make preparation for the university its excuse for being. Its courses of instruction and training are to be culminal rather than basal. The real differences between the collegiate and the four-year part of a full-grown high school are not due to any other institution. They exist because the students of the college division have normally passed the middle point of adolescence; they exist, further, not because some will attend a university, but because the majority will presumably not do so. They are precisely analogous to those which give a special character to the intermediate school. And so the junior college will function adequately only if its first concern is with those who will go no farther, if it meets local needs efficiently, if it enables thousands and tens of thousands to round out their general education, if it turns an increasing number into vocations for which training has not hitherto been afforded by our school system. Hence it will of necessity be as nearly autonomous as its place in the public-school system of the state permits; hence, too, its structure will normally have to exhibit a bifurcation into vocational and cultural departments, both organically united with what precedes.

When I am asked about junior-college vocational departments, my advice, for good or ill, is: develop two in each junior college—one for home-making and women's occupations other than teaching; the other for civic efficiency, especially for the careers, even now in the making, within the broad fields of city, county, and state administration. Beyond this develop vocational departments designed to meet more localized needs. A rural junior college would naturally, therefore, make provision for training in practical scientific farming. In industrial centers the emphasis would fall on technological branches. Commercial centers would organize a junior-college preparation for business. In every case opportunities would exist for combining schooling with calling. No national preparedness program, I venture to assert, can be

satisfactory that does not purpose to fill the gap between the training of the artisan and the university expert and that does not propose to fill this gap for as many as possible by as wide a distribution of opportunities as possible. A special reason why the professional departments of universities should further this consummation lies in the strong probability that these departments would then be relieved of thousands whose attendance is owing not so much to mistaken ambition as to the absence of other means of vocational training. A very similar benefit would, of course, accrue to the normal schools.

Thus far only one of the California junior colleges—the Polytechnic Junior College of Los Angeles—has developed well-organized vocational finishing courses—for rather obvious reasons, such as the absence of blazed trails, as far as organization is concerned, the comparatively large outlay of money required, the predominantly academic interests of the high-school teachers and principals initiating the local propaganda for a junior college, the comparative ease with which the suggestion can be made to work in communities that the university is coming to their town, etc. In some instances the argument that the junior college would keep much money at home and would, for individuals, cut college expenses nearly in two has proved more efficacious than any other. In short, while efforts are now being made in several places to organize vocational courses, the junior colleges continue to offer to a greatly varying extent only the lower-division studies of a college of liberal arts. As soon, however, as the legislation referred to above is secured—within the next few weeks—making the junior college the capstone of secondary education and assuring to it $75 per student from county and state, projects for vocational training are bound to loom larger than they have done hitherto. Nor is it unlikely that sooner or later the state will adopt the recommendation of the State Council of Education to the effect that the state high-school tax be increased for the specific purpose of furthering the development of vocational departments in junior colleges.

As long as an organic correlation of part and part can be brought about and maintained, latitude in the grouping or segregation of secondary grades is of far greater value than uniformity. Local

conditions, for example, may well make it necessary, if not wholly desirable, to establish a junior college by itself. Here and there it may be found most practicable to assign the tenth as well as the ninth grade to the intermediate school and then to make the eleventh and twelfth grades constituent parts of the junior college. Plans of this sort are actually under serious consideration in Los Angeles and Sacramento. The typical junior college, however, will doubtless continue to consist of a two-year addition to an existing high school—an addition more or less intimately united with it as to aims, organization and administration, teaching staff, and school community life. At present three tendencies are noticeable with reference to this problem of correlation. One is to separate the junior college as far as possible from the high school, to create as fast as possible a special faculty, to develop exclusive forms of student activities, to emphasize the methods in vogue in universities, and so on. Another is to differentiate as little as possible—that is, to treat the junior college merely as a high school lengthened by two years. According to a third view the advantages of both types of organization can be secured and the disadvantages of each largely avoided by applying the principle of unity in variety. A special faculty, yes, but not one without a share in the work of the grades below the collegiate division; one principal, yes, but also a junior-college dean; unity and continuity of program, yes, but also the attitudes and methods suitable for young manhood and womanhood; a distinct college life, yes, but not an isolated, separate one, least of all a pinchbeck imitation of the large university-college. The San Diego Junior College may serve as a good illustration. It is this inclusive third view, it seems to me, that does justice to all of the factors involved and that should, therefore, serve as a guide in working out the many new and perplexing problems of instruction, of administration, and of student life.

It is too early as yet to dwell at length on the relation of the junior college to its environing community and on the extramural services it will render as a center of educative influences. But there can be little doubt as to its wider mission, particularly in a state where the landscape is not dotted with small private colleges. There is the call to initiative and co-operation within its circle of

intermediate and high schools. There is the need of furthering clearer community thought and the advance toward the highlands of civic life. There is the challenge to assist in making university extension really worth while by making it largely supplementary to junior-college extension, and so forth. The old functions of the college of fifty years ago, discharged in modern ways; the new functions called for by modern insights and needs added—such may well be the substance of things not seen but hoped for.

In view of the mission of the junior college to do new and better things in new and better ways, the selection of the teaching staff becomes a matter of supreme importance. Archaic, second-hand teachers will not do. One requirement to be insisted on is a degree of mature and modern scholarship not lower than that found in junior colleges directly connected with universities. If such scholarship is at the same time more human and less neo-scholastic, all the better. Roughly measured, this requirement will be found to call for not less than two years of graduate university preparation. Of course an equivalent in terms of mastery without such university aid should always be more than acceptable. Degrees do not matter; the essential thing is to be sure-footed in the ways of the scholar. Another *sine qua non* is an ample measure of the liberal culture that embodies the spirit of service, informed by broad scholarship and inclusive appreciations. A mere specialist may do no great harm in a university; in a junior college with its man-centered aims his ways would lead to destruction. Normally a Ph.D. applying for a junior-college position should be asked to present a certificate of rebirth. A third is, of course, teaching power of a high order, demonstrated, not only in the course of professional training, but also in the secondary grades below those of the junior college. Whatever universities may continue to do, practice-teaching on junior-college students is out of the question. Such power includes, not only ability to teach young men and women by an adequate use of instruction material, but also directive insight into the principles of secondary education and into the place and functions of the junior college as a part of the state school system. Of course no such standard can be applied at once. The present situation is analogous to the beginnings of university work

in colleges, which at first had to rely largely on existing faculties. Here and there junior-college courses are attempted by instructors whose specialty lies elsewhere. Here and there, too, a department head insists on doing what one of his assistants could do better. But the tendency, I am glad to report, is strongly toward the higher qualifications outlined, so that meanwhile the universities need not fear a lowered standard. At the University of California the scholarship average of those coming from junior colleges is found to be several fractions higher than the general university average—a fact not wholly accounted for, to be sure, by the scholarly fitness of junior-college teachers. The junior-college year is longer by at least a month. Hitherto classes have been small. They have been homogeneous and so have been able to start in on a higher level than is possible for the heterogeneous mass of university-college Freshmen. They have been in charge, not of the least, but of the most, experienced teachers of their respective institutions. They have been less exposed to university "side shows." They have come to their university life and work with great expectations, with freshness and enthusiasm. Nor should we overlook the general tonic effect of the junior-college idea upon high-school men and women. There is inspiration in the thought that the professional elevator need not stop running at the twelfth-grade floor. To this stimulus the state university, a year ago, added another, on the recommendation of the School of Education. It established a higher professional degree, the high-school certificate, obtained at the end of one year of graduate study, being regarded as the equivalent of a first or lower professional degree. The following conditions must be met: (1) four years or more of successful teaching experience; (2) a total of two years of residence graduate work distributed so that one-third goes to the department of education, another to some other university department, the remaining third of the work being subject only to the general proviso that all of the courses needed for the degree must be advanced; (3) an acceptable professional thesis dealing from the educational point of view with some problem of consequence.

The response has been most gratifying despite the fact that the label, tentatively chosen, namely, Graduate in Education, has

nothing of the irridescence of the Ph.D. Indeed, the hope is fully justified that before long junior-college faculties will be increasingly recruited from those who have reached this new milestone, or the spot marked by it. Unless some unforeseen upheaval prevents, the State Board of Education is likely to prescribe a junior-college certificate, with requirements similar to those I have been discussing.

Now, finally, what of the relation of the public junior college to the state university-college? Obviously the latter may make it or mar it, for until the state shall create a directive educational organ the state university will not only continue to be guide, philosopher, and friend in all educational matters, but will also continue to have a large measure of extra-legal power. Such a position constitutes a public trust, to which the university must be said to be faithless if it does not make its fostering care and leadership all-inclusive; worse still, of course, if it subserves its supposedly special interests at the expense of the public welfare as a whole. And so, when the junior colleges come seeking the aid and institutional recognition indispensable to their rise and progress, it would be as immoral as it would be easy for a state university to bend them to its uses. But, even if the state universities should readily consent to these self-evident truths, are they in a condition fit for mutually beneficent relations of affiliation? Is it not very naïve to assume that the organization and management of the college part of these institutions are controlled by college consciousness? Seen from the viewpoint of an educational institution, the lower half of what was once the college appears often to be neither educational nor institutional. We behold a conglomerate of departments pursuing a hodgepodge of aims. In one department the student still happens to be regraded as an end; in many more he is a means; in a third the ruling passion is the protection of department industry. A large proportion of the instructors are novices, trained solely, not for secondary or college work, but for highly specialized research; many, too, are forever debarred from gaining professional insights by the great university superstition that to know is to be prepared to teach. Add to this the general underlying assumption that all Freshman and Sophomore studies are preparatory, not in the sense in which three good meals today

are preparatory to three meals tomorrow, but in a technical, professional sense, and one can hardly shake off the fear that the junior colleges, instead of saving and perpetuating college aims and ideals, will succumb to universitizing influences and introduce pre-legal, pre-medical, pre-engineering, pre-Ph.D. courses, all of them naturally dominated by the universities, while pro-student courses will be rare—too rare to do much for the vocation of becoming human.

There is thus precious little that would justify university pharisaism and a great deal to call for the attitude of the publican. At this point we may well say, *His opus, hic labor est.* Fortunately the universities, if they are to thrive as universities, need the junior colleges just as much as the junior colleges need articulation with universities. For this reason alone, if there were no others, I am optimistic enough to believe that, while the junior colleges will be influenced for the good of all concerned in the direction of adequate standards of scholarship, the universities, influenced in turn by the junior colleges, will recognize in the work of the Freshman and Sophomore years the continuation and culmination of secondary education and will reshape themselves accordingly. One desideratum of such re-forming would be, of course, the appointment of professionally trained college professors to replace the inexperienced instructor, who now has neither a living wage nor the work he wants to do and is prepared for. At the University of California an interchange of instructors between junior colleges and the University has been sanctioned already, and I do not believe I am overtaxing my imagination when I think of the possibility of calling distinguished junior-college teachers to college chairs at Berkeley; and of course not only for services to Freshmen and Sophomores. At any rate, if what I called a while ago the higher union of German and English university aims—an American union, for short—is ever to be brought about for the senior college or, if you prefer, the first two years of a university, graduate schools of the German type must cease to be the only source of teacher supply.

If we turn now for a last moment from the state-supported and state-controlled school agencies to those serving the same ultimate ends of progressive national preparedness without the advantages

and disadvantages of such support and control, we find, I think, instead of divergence of interests with respect to junior colleges, only the same good reasons for promoting them and for making the changes necessary for educationally organic articulation. He who runs may read the significance of the fact that the state university of California and the University of Chicago have been on the road, side by side, to the same goal these many years, and that they have been joined in word and deed by another pair of the same sort, Leland Stanford Junior University and the state university of Missouri. We find, furthermore, that the non-state university-colleges can move faster, if they will, than state institutions. Stanford, for example, has put a limit on the size of its Freshman and Sophomore classes and may of course, if it chooses, do away with them entirely. As for the first-class colleges—long may they live, and God bless them—their noble ideals of the higher education alone should guarantee their allegiance to the junior-college idea. How little they have to fear is well illustrated by Pomona College, which, although situated where junior colleges are at present over-abundant, has had to do as Stanford has done in the matter of numbers. This fact tends to show, incidentally, how very subordinate the causal connection is between the presence or absence of established higher institutions of learning and the demand for public junior colleges. The same college illustrates also how the older aims and methods of a more or less static culture may be transformed into the aims and methods of a modern dynamic education and how in consequence the differences between the last two college years and the first two university years tend to become differences of emphasis merely, while the line represented by the Bachelor's degree tends to become imaginary for those going on to universities for professional training whether of the research or of the applied-science type.

And so I, for one, cannot but hold to the faith that the junior college will be accepted by the nation and will be wholesomely developed as an integral part both of the system of public education and of the larger house with many mansions, American education, to the building of which must be devoted many gifts but one spirit.

CO-OPERATION BETWEEN ANCIENT HISTORY AND ENGLISH

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It is a commonplace that history and English admirably supplement each other, but it is open to question whether the greatest possible advantage has been taken of this fact in planning high-school courses in the two subjects. There is abundant available reading-matter which has historical value as well as literary significance and which is quite as well worth reading as many of the "English classics" already in the reading-lists. Indeed, some of the books now commonly read may serve the purposes of history as well as of English if read from that point of view. Moreover, historical material affords excellent subject-matter for oral and written expression, for the pupil has something definite to say, and this he must needs learn to state clearly and with precision. Further, there is ample opportunity in teaching history to help the pupil to establish the desirable habit of reading rapidly, intelligently, and with discernment.

The plan of work hereinafter set forth has been adopted in the belief that by making the most of the possibilities of these two subjects a certain number of recitation periods per week can be saved while meeting all legitimate requirements. In view of the many subjects which clamor for attention, a saving of even two periods a week for one year is worth some consideration.

In order to forestall obvious criticisms, it may as well be stated at once that the validity of the method of procedure here suggested has not been subjected to scientific investigation and is not verified by irrefutable statistical data. Nor has it been under observation long enough to draw final conclusions as to its ultimate success. The only statement to be made at present is the unscientific one that the plan seems to work well. It is therefore offered rather as a suggestion than as a certified specific. This, however, may be

said, that the present arrangement was not made as the result of sudden impulse, but has been a matter of gradual development.

Three years ago in making some slight rearrangement of the work in English it seemed logical to put the required reading of the *Iliad* and the *Odyssey* in the same year as the course in Ancient History, to select other reading-matter which should preserve the unity of the year's work, and to make it all contribute as much as possible to the course in history. At the same time the duty of the teacher of history toward training in the vernacular was recognized, and definite plans were adopted for co-operation between the teachers of English and of history for maintaining the same standards in speech and writing in both classes.

At the close of the school year the question arose whether, in view of the demands upon the curriculum, too many hours were being devoted to this particular type of work. It seemed clear that the work done in the English class had contributed enough to the history course so that we could well afford to drop one period a week from the latter. After another year's trial a second period was cut out. The time thus saved has been utilized for a two-hour course in science following the general science of the preceding year.

The plan of work now in force is briefly as follows: The time set apart for Ancient History and English in a given year has been reduced from seven to five periods a week; two of these five recitations are conducted by the teacher of English, three by the teacher of history; all of the reading done in connection with the English work is made tributary to the course in history; the use of correct English in speech and writing is as much a requirement for the history class as is a knowledge of certain historical facts. In both classes a definite effort is made to develop the ability to read rapidly, discriminatingly, and thoughtfully. The year's work as a whole must satisfy the demands of both departments for the required work of the given year.

Since the organization of the school differs somewhat from that of the conventional four-year high school, it is desirable to make clear the program conditions under which this plan has developed and the scope of the English work in the course. The school is organized on the basis of a seven-year elementary and a five-year

upper school. The first year of the upper school corresponds rather closely to the first year of a high school. Pupils who have completed eight grades of the public schools enter this class, and the year's work includes, among other subjects, beginning Latin, first-year correlated mathematics, and general science. The modal age of the first-year class in September, 1916, was thirteen years. A total of fifteen periods is given to English during the five years of the upper school. They are distributed as follows: first year, four periods; second year—the year under discussion—two periods; third year, three; fourth year, two; fifth year, four.

A brief statement of the English course in the first year will serve to indicate the point at which the second-year work begins. Ability to write legibly, to spell correctly, to use capitals and periods in their proper places, is prerequisite to entrance to the upper school. In the first year short oral or written themes are prepared weekly. Attention is directed toward insuring the habitual use in speech and writing of correct and complete sentences. The class is introduced to the use of the topical sentence in its relation to the paragraph and has some practice in making outlines. The reading for this year includes three of Shakespeare's plays, three of Scott's novels, selections from English and Scotch ballads and from Malory's *Morte d'Arthur*. It is done primarily with a view to stimulating the pupils to read in rather large amounts and to read for pleasure. Critical analysis of literature is not attempted until the third year.

As has been said, it is in the second year that the courses in English and history are combined. In this year the study of paragraphs and the making of outlines are continued. Pupils are expected to acquire a more flexible sentence structure, to be able to use the necessary punctuation for such sentences, and to make a conscious effort to increase their vocabulary. The reading for the year will be spoken of later.

The history course for this year covers the period usually included in a high-school course in ancient history—namely, from earliest times to 800 A.D. Pupils who have entered from the lower school already have some familiarity with mythology and with classical names and places through the use of such books as Burt's *Odysseus*, Harding's *Greek Gods, Heroes and Men*, Bulfinch's *Age*

of Fable, and elementary texts dealing with the European background of American history. Moreover, for the summer following their first year in the upper school they are given a list of prescribed reading which includes A. J. Church's *Stories from Herodotus* and *Greek Life and Story*, and Lytton's *Last Days of Pompeii*. No effort is made in their second-year work to teach detailed political history or the minutiae of constitutional development, but knowledge of an outline of important events is considered necessary as a framework for the study of specific periods. The objective point of the course is a knowledge of the life of mankind in its industrial, commercial, social, and artistic aspects at various times and in different lands. A consideration of the conflicts of nations with each other in the process of expansion and of their civil dissensions is not, however, wholly relegated to the background. It would scarcely be possible today, even if one wished, to ignore the great conflicts of the past, and one may, according to her temperament, emphasize the horrors of war or the ignominy of tame submission.

In all the work in history a constant effort is made to put in practice the principles of English in which the pupil has been trained, by insisting that oral and written recitations be made in good form, that complete sentences be used, and that ideas be accurately expressed. The pupils are encouraged to make a conscious effort to enlarge their vocabularies by studying the meaning and derivation of new words and by making a point of using them. The study of paragraph structure, begun in the previous year, is carried on both in reading and in writing. Outlines are made, sometimes in class, sometimes as outside work. Written work is corrected by the English teacher or by the history teacher, or by both. In any case it is corrected for both English form and historical accuracy.

As for the reading which is assigned to the second-year English class, the plan is that the first semester be spent on reading which pertains to Greek history, the second on that which pertains to Roman. In actual practice there is a tendency to devote more time to the Greek because of the greater interest of the Greek literature and because of the fact that few of the class will probably read any of it in the original. The first two months are given to reading the *Iliad*, Books ix, xiii, xiv, xv, and xvi being omitted. A little

less time is needed for the *Odyssey*, although only the first four books are omitted. The translations of Lang, Leaf and Myer, and of Butcher and Lang are used. For each lesson one or two books are assigned to be read outside of class. The story of these books is told in class, selected passages are discussed and sometimes read, stories of mythology are reviewed, and advance work is done by oral or by silent reading.

When the *Iliad* and the *Odyssey* have been completed, several Greek plays are read. The translations of Jebb, Morshead, and Murray are used as far as possible. Those tragedies are selected which tell the stories of characters who have appeared in the Homeric poems. This year the class read the three Aeschylean tragedies of the *House of Atreus;* the *Philocteles* of Sophocles; and the *Trojan Women*, *Iphigenia in Aulis*, and *Iphigenia in Tauris* of Euripides. The *Antigone*, the *Medea*, and the *Bacchae*, although not connected with the characters of the Homeric poems, were suggested and were read by many of the class. The plays are assigned so that each girl reads at least six or seven. Some read them all. The recitation period during the reading of the plays is devoted to short talks about the different plays given by members of the class and to the informal discussions which such talks naturally arouse. From books and pictures the class learns something about Greek and Roman theaters and modern reproductions such as those at Berkeley and Detroit.

The thoroughgoing classicist may think that to read Greek plays in translation is almost desecration, while our friends who aspire to prepare the pupil for his life's work "without teaching him one superfluous thing" will doubtless consider such reading a waste of time. But in our three years' trial the pupils have never failed to devour them with such avidity that the program seems justified, if only from a hedonistic standpoint.

While the reading of these translations has been in progress several English poems in classical themes have been assigned for outside reading or have been read in class, among them Tennyson's "Oenone," "Ulysses," "The Lotos Eaters," and "Tithonus," Arnold's "Palladium," and Andrew Lang's "Helen of Troy." If this seems like an overdose of classicism, at least

there is justification for it in the enthusiastic response from the pupils.

Throughout the reading of the epics the attention of the class is drawn continually to the passages which tell how the people of the Homeric Age lived and fought, how they sacrificed and buried their dead, what they wore, what sort of houses they lived in, and how they occupied their time. The assignment of topics on these points gives material for themes and opportunity for an elementary study of sources. The pupils are led to compare the manner of life at this period with what they have learned in their history of the life of the oriental nations and of the Greeks in the Aegean Age and in the great period of Greek history. For securing material for comparison they use Baikie's *Sea Kings of Crete*, much of which has been assigned for outside reading in connection with the history class, and such books as Davis' *A Day in Old Athens* and Gulick's *Life of the Ancient Greeks*.

The reading for the second semester, which is associated with the study of Roman history, has varied somewhat from year to year. Macaulay's *Lays of Ancient Rome* are suggested as outside reading, for, while it must be admitted that they can be classified neither as literature nor as history, they are stirring tales, and it seems a pity not to have a speaking acquaintance with "false Sextus" and "brave Horatius." Shakespeare's *Julius Caesar* is an obvious choice. The class finds time in connection with its work in history to read A. J. Church's *Roman Life in the Days of Cicero*, together with selected passages from Suetonius, Merivale, Froude, Oman, Boissier, Momsen, and Warde-Fowler on the characters of Cicero, Pompey, and Caesar. As one of the class exercises this year the pupils were asked to write a theme comparing the conception of Caesar which they gained from the play with that which they gained from the historians, and then to add their own personal judgment about him. Since more than half the class will read some portions from the works of Caesar, Cicero, and Vergil in their Latin course, it is not thought desirable to give time to them here. We tried Plutarch's *Lives* one year, but the class objected to the English style in the only text available which contained the desired *Lives*, so Plutarch was relegated by unanimous

consent to the optional list. This year the class will read in the last six weeks of the term Tucker's *Roman Life in the Days of Nero and St. Paul.* This will be supplemented by Fowler's *Roman Life in the Republic.* While reading these books the class will have the opportunity of comparing the life of republican and of imperial Rome and of recalling what they earlier learned about Greek life.

The reading of the class is not confined exclusively to books which have attained a position of dignity on the library shelves. Articles in current papers and magazines which deal either with ancient times or with events now taking place in those regions which were included in the ancient world are occasionally assigned for outside reading or for class reports. The *Atlantic Monthly*, the *Geographic Magazine*, *Art and Archeology*, and the *Outlook* are among the magazines that have been made use of in this way. The pupils take a lively interest in bringing to class clippings from newspapers or quotations from their other reading which contain allusions of any kind to the various matters which they are studying in class.

To those teachers in the background of whose consciousness always looms the specter of college-entrance requirements the question will at once present itself whether such a course will meet these demands. Will it count for one unit of history, or one unit of English, or three-fifths of one and two-fifths of the other? In the latter case what becomes of the required unit of history which the course in ancient history so often satisfies? Is the required ground actually covered? For formal accounting it seems best, under the present system of credits, to count it as one unit of history and to let the English work of the other four years, which amounts to twelve periods, stand for the required three units of English. At frequent intervals this year tests in history have been given similar to the tests given last year and the year before, and there has been nothing to indicate that the class is less well prepared to meet them than formerly. Neither does it appear that the pupils are in any way handicapped in English. It is permitted to hope that the time will come when instruction and practice in the correct use of the vernacular may be taken for granted, legitimately, in connection with all school work and when the hours

required to be devoted exclusively to the study of literary English may be shortened.

It has been stated that this work is at present divided between two teachers. This has the advantage of making the pupil conscious that the two subjects are not isolated in water-tight compartments. There is something to be gained from having two instructors emphasizing the same things at the same time. There is, however, no reason why it could not be done by one teacher, provided she is generally intelligent and has not specialized so extensively that she is unable to see anything beyond her chosen subject. It seems not too much to require that everyone who aspires to teach history be able to give instruction in English and have some literary appreciation, and that every English teacher have sufficient historical background so that she can at least prepare herself to teach a course of this kind without any great hardship if the occasion arises.

A first-hand knowledge of Greek and Roman literature on the part of the teacher is obviously desirable. If this is too much to hope for, she should at least take the advice of competent judges in selecting for class use and for her own reading translations which have recognized literary merit and which have preserved in a large degree the classical spirit.

AN EXPERIMENT IN THIRD-YEAR ENGLISH

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In these days in every high school the English course occupies the focal position in the curriculum. One who experiments in English has set his foot upon sacred ground; or, better, he has ventured into that inter-trench zone where every position taken must be well defended. The great war today is waged over the question whether composition and literature shall go hand in hand or be divorced. One can hardly hope to bring peace by suggesting a combination of composition, literature, and history. Yet in our experiment we made bold to do this, and in our effort to correlate the courses in literature and history we fused third-year composition, American literature, and American history. American literature lends itself to this device because of the narrow range, the small amount, and the simple grade of most of the material. The movements in American history offer few difficulties because they are simple, short, and clear. A fine basis for both forms of composition is found because the material is entertaining, informing, and inspiring. To a citizen of this country the whole body of material is of high social value.

In the orthodox high school American history is an elective. Everyone believes that all high-school pupils should study American history, but the enrichment of the secondary-school curriculum and the demands of college entrance have made this course an elective that is elected by few. With third-year English required and American history and American literature as the meat and bone of the course, one has the satisfaction of knowing that the history of one's country is not neglected in high school. The Senior is now required to study English a fourth year, and, since our experiment with third-year English proved successful, a combination course of fourth-year composition, English literature, and English history

was the logical outcome. This latter course has now run two years and will not be abandoned.

Each of these two courses should be conducted by one teacher. The third-year course is almost sure to be a successful one for any live teacher of English who has carried a minor in American history. A teacher with the normal amount of resilience has a capital time in this course. There is a wealth of material in the history and in the literature, so that every report and almost every fluent recitation gives material that is new to every member of the class. Interest is keen and spontaneous. The experiment would be a failure if one teacher conducted the English and another the history. It is not a course to be divided between two teachers. The material, both history and literature, reacts and interplays too closely to warrant any separation.

The class meets five times a week, and the course is not looked upon as an easy one. With the excess of written work—more than other English courses because of the notebook—an unusually large amount of oral composition, and the heavy requirement of the collateral reading both in literature and in the secondary history books, the year's course demands hard work. The text is Muzzey, *An American History*. Cairns, *Early American Writers;* Bronson, *American Prose;* Page, *Chief American Poets;* Foerster, *Chief American Prose Writers;* Long, *American Literature*, are handbooks in which the pupils must read constantly. Enough copies of these books are at hand so that no one is handicapped for lack of material. Samples of outlines follow:

SLAVERY AND THE WEST

1836–50

A. THE GATHERING CLOUD
1. Slavery
   a) Introduction
   b) Growth in the eighteenth century
   c) Views of:
      (1) Antislavery North
      (2) Humanitarian in South
      (3) Question of profits

2. Missouri Compromise
   a) Slavery question, 1819
   b) Louisiana Treaty
   c) Power of Congress disputed
   d) Compromise
      (1) Elements
      (2) Significance
      (3) Slavery a moral issue
      (4) Growing importance
3. Abolitionists
   a) Garrison
   b) Turner's insurrection
   c) Antislavery *v.* abolition
   d) North driven toward abolition

B. Texas
1. Later expansion
   a) Connection with slavery
   b) Mexican province
      (1) American influence
      (2) Independence
      (3) Attempts to purchase
2. Oregon
   a) Claims
      (1) Grey
      (2) Lewis and Clark
      (3) Astor
   b) "Fifty-four forty or fight"—boundary dispute
3. Annexation renewed
   a) Politics
      (1) Tyler read out of party
      (2) Webster retired
      (3) Whitman
   b) Growth of sentiment
   c) Treaty rejected
   d) Annexed by joint resolution
   e) State organized

C. Mexican War
   a) Taylor in Rio Grande
   b) Mexico City
   c) Treaty
   d) Questions remaining
      (1) Wilmot proviso
      (2) Squatter sovereignty
      (3) Gold in California

1840–76

I. PERIOD OF AGITATION
- A. Political
- B. Mental and spiritual
  1. Social reforms
  2. Communistic societies—Brook Farm
  3. Transcendentalism
  4. Study of foreign languages and literature
  5. Establishment of lyceums
- C. National and sectional literature

I. POETS AND ESSAYISTS

Emerson

Page—*Chief American Poets*
Good-Bye; The Rhodora; Each and All; Concord Hymn; The Humble-Bee; Woodnotes, I; The Snow-Storm; Fable; Forbearance; Threnody; Hamatreya; Give All to Love; Boston Hymn

Foerster—*Essays*
(1) Nature, sec. 1; (2) American Scholar, sec. 2; (3) Compensation, pp. 390–91

Thoreau
Prose (non-fiction)

Walden, 1 chapter; *Economy*, last half; *Sounds*

Hawthorne
Prose (fiction)

One novel
One story from *Wonder Book*
One legend

Whittier

Reform: Laus Deo; Ichabod; Massachusetts to Virginia; The Christian Slave; The Farewell of a Virginia Slave Mother

Legendary: Skipper Ireson; Abraham Davenport; Barbara Frietchie; Cassandra Southwick

New England life: Snow Bound; Poor Voter on Election Day; Huskers; Last Walk in Autumn

Lowell

Stanzas on Freedom; Columbus; The Present Crisis; Vision of Sir Launfal; The First Snowfall; Ode Recited at Harvard Commemoration; Ode Read at One Hundredth Anniversary of the Fight at Concord Bridge; *Bigelow Papers*

A week's work in this course is as follows: assignments in the history text; collateral reading in secondary books of history of a minimum of twenty-five pages; literature assignments which use the history as a background, equivalent to about fifty pages; and written work, which consists of writing up oral reports given in the daily class work. Each pupil reports orally to the class on subjects not treated in the textbook. Some forty or fifty of these reports are given each month by the class, and this makes a minimum demand on the pupil of two reports a month. Two reports a day on the average are given in class. The reports are always sure to be listened to because of the new material they contain; and, furthermore, interest is almost coerced because each pupil is required to take notes on these reports and expand the notes into paragraphs or outlines for the notebook. The teacher scans the notebook with the same care which he gives the other written work of the department. Besides the writing up of the notes from the pupil reports in class, three 700–1,000-word themes on collateral subjects are required each semester. In addition four home-reading books are required—two from the field of fiction, the third a biography, and a fourth that treats of the life of the people. These are the suggested readings for the first quarter of the year:

COLONIAL PERIOD

FICTION

Boy's Drake, Bacon
Scarlet Letter, Hawthorne
Merry Mount, Motley
Pocahontas and Powhatan, Eggleston
Green Mountain Boys, Thompson
Tales of New England, Jewett
Standish of Standish, Austin
Audrey, Johnston
To Have and to Hold, Johnston
Black Shilling, Barr
White Apron, Goodwin
Grandfather's Chair, Hawthorne
Alice of Old Vincennes, Thompson
Seats of the Mighty, Parker
Barnaby Lee, Bennett
Trail of the Sword, Parker
Story of Tonty, Catherwood
Lazarre, Catherwood

NON-FICTION

Elizabethan Adventures, Earle
Child Life in Colonial Days, Earle
Home Life in Colonial Days, Earle
Old Quebec, Parker
Story of the Trapper, Laut
Pioneers of France, La Salle and Northwest, Parkman
Story of the Indian, Grinnell

One who believes in the spiral construction of a curriculum can see his ideals consummated in this plan, for American history is often found in the early grades of the elementary school in story and hero form, and is met with again in the eighth grade in the narrative form, and appears for the third time in the eleventh grade in the industrial, social, and institutional form plus the attendant literary movements. Thus the field of American history is traversed three times. Now, certain advantages are obvious in the foregoing spiral treatment when it is compared with the procedure usually found in secondary schools. Many high schools have a course in American literature in one of the four years of the high-school curriculum. Along with this study of American literature goes a review of American history for the sake of background, and, no matter in what year the study is pursued, the narrative treatment of the history usually obtains. This is often, if not invariably, a wearisome repetition of the eighth-grade history work. It is perfectly patent that such a combination course as is shown above is far more interesting because the history is approached from a new angle. Again, in most high schools there is a United States history course pure and simple, but the handling of this course, which is usually given in the third or fourth year, is largely in narrative form, with rarely traces of other treatment. Such a course must endure the handicap of irksome repetition throughout its length; on the other hand, our experiment brings a newness that wins the interest and a wealth of inspiring material that enlists the enthusiasm of the students.

In the consideration of these courses from the standpoint of the student, the question at once arises: Which shall be credited, history or English? The courses are offered as English III and English IV and are so credited. Both courses are required seriatim of all who have survived English II, the second-year English course. With four years of English to one's credit one is well prepared to offer for college entrance three years of English, and to offer English history or American history as his chosen college may demand. He is prepared to jump either way and yet will have no difficulty with Freshman college English.

To the teacher who has handled history classes in the old-line way the combination course is a pleasanter task chiefly because of

the increased interest of the pupil. This increased interest is effected partly through the wider reading required of the pupil and partly through the clearer notions that come to him of the development of the literature out of the history. The reaction and correlation are very close. To prove that a clear conception of the development of the one out of the other is obtained by the pupil is difficult, but the fact always remains that the pupils look upon the course as more interesting and more entertaining than the other English courses they have taken.

A CRITICISM OF RECENT ATTEMPTS TO MEASURE LANGUAGE ABILITY

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Further progress in language scales depends to a great extent on an analysis of the term language ability. The term is used to cover generally that which is measured by scales, such as Trabue's[1] completion test language scales, Starch's[2] grammar and punctuation scales, and on the other hand the Ballou[3] and Hillegas[4] composition scales, without careful distinction or recognition of the different kinds of material included. Working on the assumption that a child's language ability corresponds to the concrete result of his activity in composition, namely, his theme, investigators have proceeded to measure language ability by attempting to evaluate these concrete results and to derive scales by arranging in ascending or descending order type themes of definitely assigned values. There are obviously great difficulties accompanying such an attempt—first, in determining what a type theme is; secondly, in the operation of scientific comparison between the type theme and the theme to be graded. Both have been dealt with for the most part by a statistical summarizing of teachers' opinions, which in this case is eventually a doubtfully scientific method. Where analysis has been used to any extent, it has been in determining what are or should be type themes, a question which is psychological and pedagogical in so far as it relates to the theme-writer's capacities, and statistical and objectively experimental so far as it refers

[1] M. R. Trabue, *Completion Test Language Scales* (Teachers College, Columbia University).

[2] Daniel Starch, "The Measurement of Achievement in English Grammar," *Journal of Educational Psychology*, VI, 615–26.

[3] F. W. Ballou, "Scales for the Measurement of English Compositions," *Harvard-Newton Bulletin, No. 2* (Harvard University).

[4] M. B. Hillegas, "A Scale for the Measurement of Quality of English Compositions," *Teachers College Record* (September, 1912).

to his themes. The operation of comparison of a theme with the scale has received little attention, an analysis and definition of which would undoubtedly react toward changes in the scale itself. The defining of this operation will also necessitate psychological categories, such, for example, as Kayfetz[1] suggests with reference to the derivation of scales. Secondly, the operation of comparison in any scientific degree depends on an analysis of the materials compared and a co-ordination of these analytical elements. The two materials to be compared in this case are the written language or composition of the child's theme and the language of the scale theme. Though there are also other comparable elements, no doubt, the actual language elements are the chief. Such an analysis, could it be carried out, must react with great effect on the nature of language scales.

There are, to repeat, these two operations necessary with respect to every language scale: the derivation of the scale and the using of the scale. While the derivation of scales has received a great deal of attention, the study of the using of scales has received little. Using the scale consists mainly in the comparison of a scale theme with a student's theme. This operation of comparison has been left relatively uninvestigated and unanalyzed. At least one necessity of scientific comparison is, as before said, an exact analysis of the materials compared. This means that language, with respect to language scales, cannot be taken uncritically, or generally, or only vaguely evaluated and analyzed, as in the past, and that language cannot be treated as a single and undifferentiated whole. Development of language scales and more particularly the use of language scales depend on a uniform and systematic analysis and evaluation of language elements.

Language—and, much more, language ability—is from an important aspect a collective term. The multiplicity of the content of the term language has been and will continue to be, until appreciated and definitely analyzed, a source of intellectual chaos in any set of scales that can be devised. Though the term language is unified by the fact that all language has one general function, it

[1] Isador Kayfetz, "A Critical Study of the Harvard-Newton Composition Scales," *Pedagogical Seminary*, XXIII, No. 3, p. 339.

is not less important to note that language is composed of many and very different groups of elements foreign to each other except for their participation in the common function of human communication. Leaving the further complication introduced by the word "ability," language alone from the point of view of the maker and especially the user of language scales has difficulties of analysis hitherto untouched. The meagerness and generality of the quite unsystematic notes, which are all that the Ballou scale gives for comparing the pupil's theme with the scale, illustrate this lack of analysis. The language has been left unanalyzed, merely the subject of general opinion. With few exceptions language scales have used language as a lump term including various and vague component materials. The term language has been used from the standpoint of its definition as to function, not from its definition as to content and language structure.

Trabue[1] is willing to admit frankly that he does not know what language ability is, but believes that his scale measures this language ability, whatever it is, fairly well. The logic of his method as of that of Ballou and Hillegas is clear from such a statement. These scales are attempting to measure the purely functional aspect of language. They are attempting to measure a child's ability to use language, his ability to make language perform its function, regardless, not only of what ability is, but of what definitely language is. It is an empirical method. It can merely correlate a child's performance with some type performance. What it is that he performs, what the materials of his performance are, whether two children are performing the same thing, is unanswered. Though specious results are obtained, they can by this method be founded only on intellectual confusion. It is educational herb doctoring, a method which cannot go far in science. Some analysis of the content of the term language from the point of view of the language scale is necessary.

Special experimental study of one of the composition scales with reference to its adequacy as a means of measuring a child's language in written composition was carried out last year in

[1] M. R. Trabue, *Completion Test Language Scales* (Teachers College, Columbia University), Introduction.

connection with the bureau of measurements at the Kansas Normal School. In the study[1] it was found that language measurement by the empirical method used in composition scales was not only inadequate and inapplicable as an analytical designation of measurable errors and defects in composition, but that the scale did not survive an empirical test similar to that used in its production aiming to test the scale in its ability to measure the functional success of language. The scale failed, in other words, not only to measure language ability with reference to the content of the term; it failed equally in measuring it with reference to function. The twenty-five opinions from Kansas did not agree with the twenty-five opinions from Massachusetts as to the relative successes of the compositions in fulfilling their function. This failure was found to be due, first, to a lack of analysis of those elements in composition which were to be measured, an analysis necessary in order to give a common ground to teachers in the operation of comparing the child's theme with the scale; and, secondly, to a lack of coordination of these elements.

Such scales evidently do not express the quality of themes, as Hillegas says, in the same sense, though not so accurately, as millimeters express the length of lines. While a line is an absolutely simple analytical unit, having but one characteristic, length, with which a millimeter, a perfectly simple statement of abstract value in terms of length, can be repeatedly placed in one-to-one correspondence, thus measuring the line, these scales are composed of themes, quite unanalyzed as to language and necessarily complex—themes which have a multiplicity of variables within them, and which as wholes cannot be placed in one-to-one correspondence with other themes. When one teacher, for example, gives more weight to an error in grammar than to an error in spelling, when another believes that good thought will carry over many an error in spelling or punctuation, when another is impressionable to elegant sentence structure and another to choice of words, how, when all these elements and others are present unanalyzed in the scale theme, can this theme be set in one-to-one correspondence with another as a

[1] Baker Brownell, "A Test of the Ballou Scale of English Composition," *School and Society*, IV, 938–42.

means of quantitative measurement? The fact that all these elements and many more must be organized together to make language perform its function gives no basis to the assumption that a scale by lumping them all and proceeding to judge by general effect can successfully measure language ability. Scales cannot proceed by throwing all variables into one dish and measuring them in the mass. They cannot proceed in this way because variations in general effect may depend successively on quite different variables left undistinguished within the mass, thus making quantitative comparison, a necessity of measurement, impossible. A scale can successfully measure but one variable at a time; if more, the interrelations of the several variable elements must be known. A measurement of general effect, however, measures neither the elements nor their organization. Until it is known precisely what composes general effect there can be no success in standardizing it or in using it as a basis for comparison with children's themes.

Thorndike[1] notes a similar analogy in language measurement. One inch, he says in effect, is said to be equal to another inch ultimately because of statistical evidence empirically derived by expert opinions. With respect to English writing, he says: "The only logical difference between equating the two lengths and equating the two specimens of writing [is] that the variability of expert judges in the latter case is so great." This quite ignores, however, the many types of variability, not only in judges, but in English writing—itself a fact which makes the analogy exceedingly questionable. An inch is an analytical unit. A comparison of inches can be made only on the basis of exact knowledge of the analytical content of inches. This content is known by the judge to vary in only one possible way—namely, in length—while in true inches he knows that it varies not at all. The inch is an abstract and artificially simple magnitude with which other inches can be put into simple correspondence with a possible variation of only one type, namely, length. To this an English theme is far from analogous. An English theme is concrete and, so far as can be determined, has

[1] E. L. Thorndike, "A Scale for Measuring the Merit of English Writing," *Science*, XXXIII, 935.

not, like the inch, an absolute, analytically simple, objective standard of merit to which an expert judge may refer for comparison. The theme has a manifold of variables and of types of variability within it, left by Thorndike, as by Hillegas, unanalyzed. These as aggregates cannot be compared quantitatively with each other because they cannot be put into simple correspondence. While the judges of inches necessarily have a uniform scheme of valuations, the judges of themes, so long as the theme material remains generally complex, unanalyzed, unco-ordinated, and without exact definition, can have no uniform system of valuations. The difference is between specific analysis and general effect.

General effect is the loosest and most nebulous of terms. Not only does it depend on various rhetorical parts which the science of rhetoric, if it be science, has long tried to analyze; it depends also on variable human receptors. For the purposes under consideration—namely, for the purposes of scale using as well as scale derivation—the rhetorical elements and the human receptor both remain unanalyzed and unevaluated. W. S. Monroe, in summarizing recent work in composition in the Bureau of Educational Measurements and Standards at the Kansas Normal School, states that investigations show that chaos prevails in composition scale work owing to lack of adequate analysis. It may be safely said that the next future of the language scale will be an analysis of the elements necessary to the comparison of themes and to scale derivation; it will be the analytical phase.

Analyses of language with respect to its amenability to measurement are at present valuable, not so much in defining for scale use the final elements of language as in denoting some of the complexities and problems in this field that must be met by those who will progress to a scientific basis for composition scales.

As a tentative definition for experimental purposes the following may be used: Success in the use of written language depends on the ability of a writer to relate his words to a reader in a way that affects the reader according to the writer's intention. This possibly may be termed a behaviorist or, better, a Freudian definition of language in so far as it attempts to eliminate the "transmission of

ideas" notion of language. The hypothesis of language as a symbolic vehicle somehow capable of transporting a fixed content of consciousness from one mind to another is here given up. This greatly disarranges the orthodox "form-content" analysis of language, and perhaps destroys it. It necessitates at least a treatment of the "form-content" relation from a different basis.

The relations of language to the reader may be divided in general into two classes. The first class includes those formal elements of language, such as grammar, spelling, and punctuation, the relation of which to the reader is definite and precise and requires a response or judgment of merit, which, so far as it relates merely to these forms, is fixed and predictable of all literate persons. The second class includes, not only the elements of rhetorical form proper, but language-content, called the thought or the material which people say language transmits. The relation of the second class of elements to the reader is variable, resulting in an effect that is uncertain and relatively unpredictable owing either to inherent lingual plasticity or to ignorance of the complexity of the laws governing the case. Toward elements in this second class the reader's response or opinion of merit is only indirectly or tentatively predictable.[1]

These variable factors of language are the more important and obviously the most difficult to identify and measure. The fixed elements of language are at once easier to measure and have importance only as instrumentalities.

Although language analysis as a basis for scales has advanced little beyond this primary division into the fixed and variable elements of language effect, and that unconsciously, indications are that this is merely the beginning of the necessary process. Isolation of the fixed elements of language has proceeded to the extent that there are now punctuation scales, grammar scales, and spelling

[1] Future analysis of these variables may determine whether or not Thorndike ("Notes on the Significance and Use of the Hillegas Scale for Measuring the Quality of English Composition," *English Journal*, II, 554) is right when he suggests that there is ideally an objective absolute of merit for an English theme which standardizes all others; and only analysis of these variables, not opinions of their aggregate, can determine it.

scales.[1] Though it is somewhat doubtful whether spelling can be included as an element of composition, since composition takes cognizance of no unit less than the word, its inclusion among the fixtures of language can cause no trouble, since it is always measurable without reference to other elements of formal composition. It can be graded as to difficulty in an independent scale. The question concerning it is to what degree spelling ability should be included in an estimate of general language ability. Grammar and punctuation, unlike spelling, are closely correlated—so closely, indeed, that there is doubt whether they are essentially distinct. The measure of ability in punctuation is directly related to the complexity of grammar and grammatical sentence structure in any one instance. A child who uses complex but good grammar and fails in punctuating probably cannot be graded with a child whose elementary grammar makes punctuation easy. Spelling, punctuation, and grammar are all three, for that matter, related so intimately to the "thought-content" that theme measurement by scale becomes somewhat complicated. Undoubtedly some types of thought put more strain on these three elements of language than other types.

The following remains true of spelling, punctuation, and grammar, however: it is known definitely when they are wrong and when they are right. Any one of these must be judged always by the same criteria—its conformity to rule. Judging in this case, somewhat similarly to judging inches, becomes, not a matter of choice or personal selection, but a simple operation of noting deviations from a prescribed standard. The error, the nature of the error, and its correction are exact certainties. Literate persons know whether or not language is grammatical, properly spelled, and, usually, properly punctuated, and this response of theirs is fixed and in any special case definitely predictable. The only variabilities which these elements of language can show are those which break the rule. Based, as they are, on clear and arbitrary conven-

[1] For example, L. P. Ayres, *The Measurement of Spelling Ability* (New York: Russell Sage Foundation); Daniel Starch, "The Measurement of Efficiency in Spelling," etc., *Journal of Educational Psychology*, VI, 3; "The Measurement of Achievement in English Grammar," *ibid.*, VI, 615; *Educational Measurements* (New York: Macmillan Co.).

tion without recourse to taste or choice, these three offer analytical simplicity to the scale-maker. This obvious fixity of standards is an important consideration and is the basis of this one of the two classes of language elements.

It is in the class of variable language elements that the scale-maker meets, not only the most important, but by far the most difficult, problem. Grammar, punctuation, and spelling are in effect merely limitations imposed by general rule on the writer. They are taken for granted, and for that reason their correctness, which is absolute merit in this case, directly affects the reader but little. Success in affecting a reader in a way intended by a writer depends far more directly on a writer's ability in those variable elements of composition which depend, not on fixed rule, at least not clearly so, but on choice, on free judgment and taste. At this point language aims not merely to be correct. A transposition is made from a criterion of internal correctness to a criterion lying in the success in relating language in some intended way to the reader —in other words, in getting it across. An analysis of these variable effects on a reader must be based, if any scientific scheme of measurement is in view, on an analysis, and to some extent an isolation, of these variable elements in language. Measurement of these variables may be attempted by comparing the exact and defined effect on a reader with the exact and defined intended effect of a writer, thus obtaining the ratio expressing language efficiency. But this is made most difficult and probably impossible by the fact that there can be no exact knowledge of the scope of a writer's intended effect except by his language, nor can the actual effect on the reader be accurately gauged, and certainly not designated except by referring definitely to those elements of language through which the effect is made. Measurement of these variables, to repeat, must rely ultimately on an exact analytical evaluation of the elements of language itself. While the whole matter is exceedingly complex, perhaps hopelessly complex, progress will depend, at any rate, on the possibility of language analysis, particularly the analysis of the so-called variable elements.

SCIENTIFIC PROGRAM-MAKING IN THE CENTRAL HIGH SCHOOL OF GRAND RAPIDS, MICHIGAN

ALICE M. JAMES
Assistant Principal

The usual method of making out a general program for the school and allowing pupils to choose for themselves their teachers and their hours of recitations was followed in our school until a few years ago. By this practice at least two weeks of the most valuable time of the whole semester, the two weeks at the beginning of the semester, were almost wasted by the necessary readjustments of pupils' daily schedules. With the choice of teachers and of hours of recitations in the hands of the pupils the classes of the most popular teachers, unless these classes came the last hour of the day, were full to overflowing, while those of the less popular, but possibly equally as good, teachers were nearly, if not quite, without students. Naturally most of this readjustment fell to me as assistant principal, and finally, after much hard thinking, I hit upon a scheme which has evolved into our present plan—a plan which has the hearty co-operation of every teacher and of every thoughtful pupil in the school, a plan which takes for its execution one day of the old semester instead of two weeks of the new one, and also a plan which can be adapted to any school, whether it is administered on the basis of large or of small session rooms, with or without heads of departments.

Our school is organized on the basis of principal, assistant principal, six session-room teachers, each having charge of two hundred or more pupils, heads of departments, and classroom teachers. In making the program for the semester each one of these separate divisions of teachers has a share.

The session-room teacher is responsible for the careful guidance of each pupil in his choice of studies. This latter work is of the greatest importance and takes more of this teacher's time than do

all of his other duties put together, though these duties are by no means inconsiderable. Beginning with the tenth grade, our session-room teachers work out with each pupil, subject to change, a sequence of studies for the remainder of his course. The following is a bona fide blank illustrating this phase of the work:

COMPLETE PLAN OF WORK

Name.... AYERS, JOHN.....Course.... LITERARY.....

hrs.		hrs.		hrs.		hrs.		hrs.	
	Eng. 1 Math. 1 Lat. 1 Hist. 1	20	Eng. 2 Math. 2 Lat. 2 Hist. 2	40	Eng. 3 Math. 3 Lat. 3 Bot. 1	60	Eng. 4 Lat. 4 Bot. 2	75	
hrs.		hrs.		hrs.		hrs.		hrs.	Units
	Eng. 5 Math. 4 Hist. A Span. A	95	Eng. 6 Math. 5 Hist. B Span. B	115	Eng. 7 Physics 1 Hist. 7 Span. C	135	Eng. 8 Physics 2 Hist. 8 Span. D	155	Eng. 4 Math. 2½ Lat. 2 Hist. 3 Span. 2 Sci. 2 15½

NOTE.—Univ. of Mich. Undecided between Engineering and Medicine.

Soon after the middle of the semester, sometimes even before that, the session-room teacher begins conferences with each pupil in his charge as to his selection of subjects for the ensuing term. After this conference each pupil is given a blank like the accompanying, which is filled out in ink and returned to the session-room teacher. These blanks are also sent to all pupils of other schools tributary to the Central, who expect to enter the Central for the first time at the beginning of the new term. These are made out under the direction of the teachers in these other schools. Notice that the same John Ayers has evidently proved a weak student in mathematics; has decided to put science in its place for the remainder of his course; will therefore probably decide on medicine for his life-work.

Monday or Tuesday of the week before the ending of the semester each teacher in the school marks these plans of work for

every pupil in her classes, in the columns P, C, N, or D—P for "passed"; C for "conditioned"; N for "not passed"; D for "doubtful." On Wednesday of the same week each session-room teacher reports to the assistant principal, on blanks furnished from the office for that purpose, the number of pupils in his session room

PLAN OF WORK

Name....AYERS, JOHN.....
.....Grade.....Class.....Course
For Term Ending....Jan. 26, 1917.....

STUDIES OF PRESENT TERM

Teacher	Subject	Grade	P	C	N	D
Miss Clay	Eng.	6				
Mr. Wilcox	Math.	4				
Miss Stout	Hist.	A				
Miss Elliott	Span.	A				
.....	.....	.....				
.....	.....	.....				

STUDIES PROPOSED

.....
English 7 .....
Mathematics 4 .....
History B.....
Spanish B.....
.....
.....
*.....Grade.....Class.....Course
For Term Ending.....

*To be filled out by session-room teacher.

who will be in each grade of each subject in the new semester, and also reports the number of doubtfuls in each subject. These numbers are compiled in the office. The heads of departments, who have already made out a tentative program for their respective departments, hand to the assistant principal a revised program based on these final numbers.

On Thursday the principal and his assistant sit down with these tentative programs to the business of making a complete program for the school; as on Thursday the semester's examinations also begin, it is possible to secure the necessary interviews with individual teachers with regard to various details of the program without seriously hampering the work of the school.

By the next Wednesday, the Wednesday of the last week of the semester, the program is complete, and the assistant principal, aided by the heads of departments, has prepared class lists according to the following blank:

Subj..English 7.....Hr..1..	Subj..English 7.....Hr..1..	Subj..English 8.....Hr..2..
Tr..Miss——.....	Tr..Miss Ransom.....	Tr..Mr. Jones.....
R..222.....S.R....	R..234.....S.R....	R..665.....S.R....

The teachers have corrected the standings marked "D," so that the "Plan of Work" and "Class Certificate" for each pupil is complete. For example, that of John Ayers reads as follows:

PLAN OF WORK

Name....AYERS, JOHN.....
.....Grade.....Class.....Course
For Term Ending....Jan. 26, 1917.....

STUDIES OF PRESENT TERM

Teacher	Subject	Grade	P	C	N	D
Miss Clay	Eng.	6	P			
Mr. Wilcox	Math.	4			N	
Miss Stout	Hist.	A	P			
Miss Elliott	Span.	A	P			
.....	.....	.....				
.....	.....	.....				

STUDIES PROPOSED

.....
English 7.....
Mathematics 4.....
History B.....
Spanish B.....
.....
.....
*.....Grade.....Class.....Course
For Term Ending....Jan. 26, 1917.....

*To be filled out by session-room teacher.

CLASS CERTIFICATE

Name....AYERS, JOHN.....

This slip indicates the studies to which the student is entitled and must be presented to each teacher on the first day of the semester.

N.B.—Copy exactly, and in the same order, under "Studies Proposed" all that you have under "Studies Proposed" on "Plan of Work" blank.

STUDIES PROPOSED

English 7.....
Mathematics 4.....
History B.....
Spanish B.....
.....
.....
.....
.....Grade.....Class.....Course
For Term Ending....Jan. 26, 1917.....

Each of the fifty-odd teachers has been informed by a circular similar to the following of his exact place and his particular duty in the next business before the faculty—that of making out a schedule of classes for each one of the twelve hundred and more pupils in school.

Thursday, January 25
Making Programs
8:30 Sharp

Room 106 MR. SNELL

English.....MISS CLAY
History and Music.....MISS STOUT
Mathematics and Bookkeeping.....MISS ELLIOTT
Languages and Manual Training.....MISS WARING
Science and Drawing.....MISS POWERS
Writing on board.....MR. BRADFORD, A.M.
MR. WILCOX, P.M.

The next day, Thursday, the last day but one of the semester, this work is begun at 8:30 A.M. The teachers who are to assist

Mr. Snell in Session Room 106 assemble in that room, secure and arrange their class lists of English, history, and so forth. Mr. Snell has ready the pile of "Plans of Work" alphabetically arranged, and the work begins, proceeding as follows:

1. Mr. Snell calls out the name on the first plan, "John Ayers."

2. Mr. Bradford writes the name on the board, or, if each teacher has been provided with a numbered alphabetical list of the names of all of the pupils in Mr. Snell's session room, with "John Ayers" as number "1," writes on the board that number. Either method insures the correct spelling of the pupils' names as teachers write them on the class lists as indicated below.

3. While the name is being written on the board Mr. Snell reads from the plan, "English 7, Mathematics 4, History B, Spanish B." This is done that each teacher will have his attention called to the name and the subject and be ready without loss of time with his assignment.

4. Miss Clay, who has the English lists in charge says, "English 7, 1–222," meaning that John Ayers will have for his recitation hour for this grade of English the first hour of the school day, in Room 222.

5. Miss Clay writes the name of John Ayers on the class list to which she has assigned him.

6. Mr. Snell writes after English 7 on the "Plan of Work," "1–222." And so on through the list of studies on the proposed plan.

When John Ayers' schedule is finished it reads as follows:

English 7	1–222
Mathematics 4	2–334
History B	4–214
Spanish B	6–116

Each of Mr. Snell's pupils, numbering 225 or more, has his schedule made out in a similar fashion, and all other session-room teachers in the building are at the same time working with their groups of teachers in the same way. The teachers who have the class lists see that the sections are kept as nearly even in numbers

as possible. The class lists in English 7 will read something as follows:

Subj..English 7 ....Hr..1..... Tr..Miss Clay ..... R..222..... S.R..106..	Subj..English 7.....Hr.2 ..... Tr...Miss Hayes ..... R..234.....S.R..106..	Subj.....Hr..... Tr..... R.....S.R....
John Ayers Alice Ames Henry Ball Carrie Comstock Henrietta Moon	Julia Adams Mary Hollister Sarah Smith Mary Whelan	

As the work in each session room is finished all teachers' lists are brought to the office. On Friday, which is clearing-up day for all sorts of things, the heads of departments sort and hand each teacher her lists; the session-room teachers see that the daily schedule on each class certificate is an exact copy of that on the "Plan of Work"; all reports of every kind are checked over, and in fact each teacher does everything that should be done to finish up the term's work before starting a new one.

On the following Monday, the first day of the new semester, we come together ready to start all classes, each with its proper assignment of pupils. Every pupil is given his "Class Certificate" by his session-room teacher at the very beginning of the day, the session-room teacher retaining the "Plan of Work," which becomes a tentative program for that pupil.

The classroom teacher refuses to accept a pupil who comes to her class unless his certificate and her list agree. No more classes of forty-five for Miss King and at the same hour only seven for Miss Allen are found. The prospect of changes in the personnel of the class is so slight that lesson assignments may safely be made on the first day and a prepared recitation expected on the second day of the semester.

Out of the one thousand three hundred students there may be from seventy-five to one hundred whose plans need some adjusting. Necessarily there are more of these changes to be made after the long summer vacation than at the mid-year. This is because pupils often present credit for work done during the summer. For example, John Ayers, marked to repeat Mathematics 4, may

have obtained permission to tutor in that subject and succeeded in obtaining from his tutor the recommendation to try Mathematics 5.

It is quite possible that the plan as outlined may seem cumbersome to those unfamiliar with its execution, and it may perhaps strike the uninitiated that it calls for an immense amount of work and that a great deal of time must be consumed in the making of the schedules for the students. To the first objection the answer can be made that it is found to be perfectly simple in its execution from beginning to end. As to the amount of work required, it is impossible to deny that in its execution there is a great deal of work on the part of each one of the faculty; but it is work for which each one receives a return, as it is much less nerve-racking and wearisome than our former method. As to the time required for making students' schedules, the first time a body of teachers attempts this the time required will probably be two days. So well does the plan work with our faculty that almost without exception the schedules for our entire school of over thirteen hundred students are made out in about four hours—and not one teacher in our school would go back to anything approaching the old method of program-making.

EDUCATIONAL NEWS AND EDITORIAL COMMENT

Chicago Schools

A wise American of the last generation strongly insisted that we must not judge democracy by its failures. Certainly no one would be foolish enough to estimate the value of democratic government by the recent experiences of Cuba, of China, or of Russia. Even in America we are compelled to believe in democracy, not because of spoils politics and pork-barrel legislation, but in spite of such failures. In Illinois we still support popular rule, in spite of recent tragedies and bloodshed in East St. Louis; and in Chicago we still believe in public franchise, in spite of an incompetent city administration saddled upon us for two years more; we still believe in popular control of education, in spite of the fact that our schools are constantly the playthings of politics, of religious prejudices, of personal whims and ambitions.

In June the *School Review*, speaking of changes about to be made in Chicago school control, predicted that there was to be a new board made up of strong, independent citizens who would set aside old controversies and would organize a school system second to none in perfection of organization and in breadth and quality of instruction.

The *Review* added that this statement was merely a prophecy—it was the substance of things hoped for; we therefore at present have no more serious error to account for than a mistake in prophecy or of what might have been. In June the mayor of Chicago, or whoever makes up his slate, nominated a new school board. Very few, if any, of the appointees were ever heard of before; they may or may not be people of ability. Then followed a nauseating spectacle of criminations and recriminations, with two boards, a new and an old, trying to secure recognition. Charges and countercharges in the city council flew thick and fast, including threats of impeachment proceedings against Mayor Thompson. Finally, in July, the Thompson (or someone's) appointees won out. A court decided the new board was legally constituted. However, they are at present (July 31) being subject to a new attack. A master in chancery is hearing a case brought by a taxpayer to withhold from officials of the new board payment of city funds,

on the ground of the general incompetence of newly appointed members. Apparently his case is not hopeless.

If, then, it were not for the dictum not to judge by failures the outlook would be gloomy. The one ray of comfort is that the thousands of teachers and scores of thousands of children go on as best they can under fairly competent instructional conditions. The vast depths of the system are placid. The storms are all near the surface, blown up by great winds that start from nowhere and arrive nowhere.

Composition in Correlation with Other Subjects

It is the fashion today to urge that English composition as at present conducted is largely wasted time. Educational leaders affirm that pupils need to be transferred from the artificial situations prevalent in composition classes into what may be called "real writing and speaking situations." And they tell us that these real situations are to be found in courses of history, civics, geography, and the like, which furnish abundant opportunity for both oral and written communication. Upon these premises program-makers are advised to reduce formal composition to one or two fundamental courses and to make every oral and written communication in all classes a real composition exercise. This apparently sensible position may be accepted, if definite provisions are made for vigorous and positive instruction in language habits through the medium of topical recitations and written exercises in content subjects. No haphazard incidental instruction will suffice.

Primarily, there must be kept in mind the fact that interest in content and in form are entirely different types of interest. Any capable writer knows that his expressional powers reach a maximum of efficiency only when his attention is thoroughly centered upon the subject-matter of his discourse. True, he has more or less deliberately made a prevision of the various logical steps by which he proposes to proceed to his goal. But when once he is in the fervor of writing, he cares little for mechanics like spelling, punctuation, grammatical agreement, or even fine rhetorical distinctions. For these details he has no more thought than he has for the legibility of his handwriting. Indeed, if any detail obtrudes itself, he impatiently pushes it aside, satisfied for the time being with crosses for punctuation marks, with single letters for words, or with dots or dashes for the exact expression that does not spring readily to his pen. The result may be a queer page of scratches and even blotches decipherable only by the writer himself. For the time being his total message,

with a reasonable comprehension of its various sub-ideas, engages, and ought to engage, a writer's undivided attention.

But the practiced writer is content temporarily to ignore mere mechanics only because he has the comfortable feeling that his rough draft is to be subject to one or more thorough overhaulings. He is willing to rely upon instinct and language habits to do their work in a fairly competent way, knowing that at the proper time and place he will have abundant opportunity to refine and polish. Before him in strict review will pass each successive sentence; dots, dashes, and abbreviations, a conglomerate individual shorthand, will be interpreted and completed. One sentence will be vigorously jerked from its context; another turned upside down; technical words looked up in the dictionary, often by a stenographer. In short, a writer pays to his composition an attention analogous to that he pays to his person before a dinner party or to his golf stroke when practicing with his caddy. He puts his thought, much as he does his person or his golf stroke, into form presentable for good society.

Content interest is primary, form interest is secondary. A worthy composition in poor form is no worse than a badly dressed man whose brain and heart are solid gold. A string of insipid ideas in good form is no better than a shallow-brained nincompoop dressed in the latest fashion.

Just in this distinction between content interest and form interest lies the great difficulty of teaching composition in connection with content subjects. Grant that teachers of content subjects themselves use good language habits (an assumption decidedly questionable), the doubt arises as to their willingness to insist upon, and their ability to give wise instruction in, the form aspects of composition. It is all very well for a principal to instruct all his teachers to guard against bad English in their classes. Much good may perhaps result. At the same time he must see to it that patient, timely, vigorous, and unremitting energy be spent by the teachers, quite apart from their attention to content questions, upon the grammatical and rhetorical principles of effective expression. Let a far-seeing principal decree that every bit of written work in his school shall be proofread by the writer, not once, but twice or more. This proofreading habit is about all that even a competent teacher of geography or history can find time to supervise. Instruction in language habits, in and of itself, must remain in the hands of the English department. By way of sensible co-operation, let English teachers use as laboratory material the proofread essays written by pupils in content courses.

Education as Usual

Dr. John H. Finley has just returned from Europe with the message that war-stricken France is doing everything in her power to keep her educational system running. Near the battle line she is even opening schools in caves and providing both teachers and children with gas masks. Dr. Finley uses the example of France to urge that America must not let the needs of the hour, however heavily they may fall upon the men and women of today, affect the defenses of tomorrow. Universities, colleges, and schools must continue as usual.

The colleges will be the hardest hit. One college president reports that 75 per cent of his students have entered some branch of the service. A high federal official calls the outlook ghastly. England's experience proves how futile it is to allow the preparation of well-trained men to languish. After the flower of her youth from college and university and engineering school had enlisted and most of them had been killed or disabled, England, with her educational institutions empty, learned that the war is one of factories, of machinery, of chemical problems, for which trained men are needed. Canada's colleges too were drained. Of course these men must go—brains, personal force, and leadership are needed in the trenches. But there ought to be spread abroad a most urgent call for youths not yet twenty-one to fill the vacant places in the higher institutions. Should the war drag on until millions of our troops are involved, the loss in our professional ranks of the next generation will be great. Thus, both as a patriotic duty and as an unrivaled personal opportunity, there rings out this year the call of the higher institutions for men. Commissioner Claxton has started the slogan, "No lowering of efficiency in our schools." This is good; but upon the 150,000 college men, future scientists, and trained experts the inroads of enlistment will be very heavy. Now, if ever, high-school influences ought to turn young men in the direction of higher education.

A Loose-Leaf Record Book

Superintendent R. E. Cavanaugh, of Salem, Indiana, reports the use of a loose-leaf record book which accomplishes several very desirable results. By its use the administrative officers are able to keep in close touch with the work of each teacher. The records are readily preserved in permanent files. Incidentally the records of each pupil in the various departments are collected and placed on file in the principal's office. The plan, moreover, provides opportunity for each teacher to supplement

his numerical estimate of a pupil's work with a brief statement of a pupil's effort, deportment, and achievement month by month.

Important Innovation in Part-Time Education

A further step toward the practical correlation of education with industry is to be seen in the action just taken by a number of Akron rubber factories in establishing at the Municipal University of Akron thirty scholarships in the engineering college under the following unique conditions: The candidates will be chosen from high-school graduates ranking in the upper third of the class, preference being given to graduates of Akron high schools, although others will also be received. The scholarships will cover all tuition, incidental, and laboratory fees. Upon entrance the scholarship-holders will be assigned to a course upon the co-operative basis, working alternate two-week periods in factory and college. In the factory they will become a part of the regular factory training squadron, proceeding step by step through every department of the industrial organization. In the college they will receive training in basic engineering and business-training subjects, this work being related to their practical experience by a regular system of co-ordination. Each student will receive from the company employing him the sum of $37.50 for each two-week period during which he is employed. At the end of the four-year course the graduate will have the opportunity of a permanent position in the organization in which he has been trained. Among the co-operating firms are the Firestone Tire and Rubber Company and the Goodyear Tire and Rubber Company, both of which have recently established industrial graduate fellowships in rubber chemistry at the Municipal University.

The plan just outlined is a decided innovation in the development of the part-time system, in that it offers the opportunity for a high-school graduate to procure an education practically without expense to himself—a condition now scarcely to be found outside such institutions as West Point and Annapolis. The co-operating firms are acting on the same sound economic basis on which the government itself proceeds, namely, that money spent in training men for its own service is well invested.

Big Things in the Small High School

To many a teacher who has served her apprenticeship in the small high school or who is even now wrestling with its problems this ques-

tion presents itself, "To just what degree can the average high school in a small town copy the activities of its city model and still retain its own efficiency?" In the small school the faculty is usually composed of teachers of meager experience, if much enthusiasm. They carry many subjects and are sufficiently burdened with classroom problems. Before the work of the year is hardly well under way, however, a whole army of extra-curriculum claimants for time and strength lay siege to the school.

Mary Jones, perhaps, has visited her cousin in a larger town where there is a high-school bird club. Mary is a real science enthusiast. Her school must have a club too. She gains the principal's doubtful consent, enlists twenty members and secures Miss A's Saturday mornings for bird walks. Then Miss B is persuaded to organize a modern-language club, which meets Friday afternoon. A few faithful spirits attempt to attend both clubs, but the earlier organization suffers a distinct loss of prestige. By this combination of circumstances two teachers are burdened with an organization in addition to their six classes a day. The turn of the rest will come!

Meanwhile an interest in track work draws together another section of the school, only to give place to basket-ball enthusiasm. As the only man on the faculty, the principal himself has to put in his valuable time as athletic director, although his administrative work plus four classes a day is enough for one man.

Musical talent is not to be neglected; the school must have a glee club and give a cantata; the Senior play has become an institution, and the Sophomores want one too; what does a school amount to without a debating contest? Through all this turmoil the school paper travels along its beneficent but time-consuming way. Thus the little school is teeming with activities, all excellent in themselves. Its students enjoy the full benefits of a well-rounded education. But is there not another side to the question?

The same small group of growing young people is called upon to give attention and strength to manifold phases of extra-curriculum life until there seems to be little time left for their studies. Sarah Smith is a girl of great ability and much school spirit, one who feels it her duty to help in all things. Her mother begins to complain that Sarah has something to do at school every night and can never take care of the baby. Will James is an athlete and sings; naturally he is popular socially. His father says he is too busy to study, but he never forgives the principal when Will, because of low scholarship, loses his place on the baseball team. Mary Green carries five studies and won't neglect

her lessons; consequently, when debates and other activities fill her days, her late hours result in making Mary a "giggler" at school and a "crank" at home. Her doctor-sister has reason to be agitated over the state of the girl's nerves!

What must be said of the teachers? They have the interests of the school at heart, they believe in all these good things, but they watch with growing apprehension the lowering of vitality and application on the part of their pupils. As far as they themselves are concerned, they are doing their best, but with them, as well as with the children, too many extra-classroom responsibilities are undoubtedly drawing unduly on their reserves of strength and affecting the quality of their work.

To what extent, then, shall we have the big things in the small high school? Here is the problem. Who can offer the satisfactory solution? What is the "golden mean"?

B. E. H.

Jud, North Dakota, Community Picture Show

There are two fundamental principles underlying every successful community co-operative enterprise. First, there must be a definite end in view; secondly, there must be a mutual interest in the project. To say that Jud or any other community has a full possession of these principles would be but idle words, for all communities are somewhat alike. But be that as it may, the essential thing is that we have a community moving-picture show. It is strictly co-operative and all profits go back to the community as a whole in the shape of better films and slides. And, like most undertakings of this type, it has passed through every stage of success from little interest with empty seats to high interest and a full house.

Jud, however, is peculiarly fortunate in possessing a school board which feels, and declares, that the school buildings should be used by the adults of the district as well as the children. This enterprise is but one phase of their attempts to bring the school and the people together. Last fall they noticed that the assembly hall—ours is the country-theater type—was used but a few times during the year, mainly for political purposes. They then set about to find some means of bringing it into use more frequently and hit upon the happy expedient of a co-operative picture show that would bring the people together at least once a week.

Naturally there were a number of problems to be solved before their aims could be realized. Money had to be raised to buy the equip-

ment and films suitable to be shown in a school hall had to be found. Other problems, such as the organization, admission fee, and personnel of the management, had to be definitely settled.

Finally, the township—for ours is a township consolidated school—paid for the electrical plant; the patrons of the school held a box social to help pay for the motion-picture machine; the balance was made up by private subscription, to be later repaid from the profits of the show.

In the search for films it was found that there were several firms who were making a specialty of renting films and slides to schools and churches. The best dramas, clean comedies, and purely educational films were available. The state and federal governments, the Agricultural College, and a number of manufacturing firms had films that could be obtained by paying the transportation charges.

The "movies" are held every Saturday evening. The local band usually plays for the show. Thus there are two strong forces pulling the patrons toward the school buildings at least once a week, and they usually come—several times through blizzards, when the thermometer was far below zero. The program is sometimes varied by flag drills or other exercises by one of the grades.

The profits, however, have never been large—rarely over three dollars—for the surrounding territory is still thinly settled, but the interest taken has been encouraging and points toward a better and closer community spirit in the future.

The machine is also almost an essential in class work, and it is planned to use it more extensively in the future in illustrating various school topics. It may be, and has been, used for special programs, such as "Baby Week." Needed school equipment, paintings, and other improvements are easily obtained when a picture show or two may be given to raise the money, for, while the patrons are paying for the desired improvement, they are also being entertained and instructed.

L. C. C.

CURRENT EDUCATIONAL WRITINGS

I. REVIEW OF RECENT LITERATURE ON SECONDARY-SCHOOL MATHEMATICS

E. R. BRESLICH
The University High School

The discussion of writings on mathematics has been limited to textbooks and articles dealing with some phase of secondary mathematics, including reports of committees. For the purpose of convenience these articles have been classified as follows:

1. Discussions of the values of mathematics as a high-school subject. Among teachers of mathematics this topic probably has aroused more interest during the past year than any other.

2. Suggestions for improving methods, arrangement of material, requirements for graduation, interest on the part of the pupil, and means for developing greater skill in the mathematical processes.

The reviews which follow are arranged in this order:

THE EDUCATIONAL VALUE OF HIGH-SCHOOL MATHEMATICS

1. "Teaching of Elementary Mathematics." By Louis C. Karpinsky. *School and Society*, January 20, 1917.

Efficiency, says the writer, is the watchword of modern business. The details involved in manufacture are examined critically. Public education should be subjected to the same critical scrutiny.

Critical examination of the study of mathematics is being made and progress along the following lines:

a) Correlation is worked out between several branches of mathematics and between mathematics and life.

b) The historical development of mathematics is receiving more attention.

c) The details of the teaching of mathematics are being studied.

d) The trigonometrical relations receive recognition in plane geometry.

e) The number of problems and illustrations in applied design, and of other practical applications, is increasing.

f) The study of *formal* geometry is preceded by an introductory course.

g) Graphs are introduced in algebra.

2. "Report of the Committee of the New England Association of Teachers of Mathematics on Secondary School Mathematics." *Mathematics Teacher*, April, 1916.

This report gives a study of the present status of secondary-school mathematics and a discussion of the fundamental issues. Some of the educational values of mathematics are considered in detail and a comparison is made of the curricula of American schools with the schools of European countries.

The committee reaches some important conclusions and makes recommendations regarding high-school requirements in mathematics, college-entrance requirements, the curriculum, and the preparation of teachers.

3. "The Place of Mathematics in the High School." By Raleigh Schorling, F. A. Kahler, and O. M. Miller. *School Science and Mathematics*, October, 1916.

This is a report of the committee appointed by a club of teachers of mathematics in the city of Chicago to investigate the current criticisms of high-school mathematics.

The committee gives a long and thorough discussion of the values of high-school mathematics. It also suggests the type of mathematics that should be required in the future high school.

4. "The Value of Mathematics as a Secondary-School Subject." By Harriet R. Pierce. *School Science and Mathematics*, December, 1916.

Miss Pierce argues that mathematics is an excellent subject for forming habits of study, such as neatness, accuracy, and concentration.

5. "Required Mathematics." By A. R. Crathorne. *School and Society*, 1917.

The criticisms of high-school mathematics are considered, and comment is made upon the signs of interest among teachers of mathematics. It is shown that the more constructive criticisms are resulting in such forward movements as correlation and the laboratory method.

The problem of formal discipline also receives some consideration. In the usefulness of mathematics we find arguments for both the formal and the useful side of algebra.

6. "Reasons for Studying Algebra." By George W. Myers and George E. Atwood. *Elementary Algebra*. Scott, Foresman & Co.

This excellent statement of the case of algebra should be read by every teacher interested in secondary education.

7. "The Bearing of the New Psychology upon the Teaching of Mathematics." By Agnes L. Rogers. *Teachers College Record*, September, 1916.

This article gives a review of experimental investigations in algebra and geometry. It discusses the amount of correlation between efficiency in mathematics and efficiency in other subjects and reviews the established results regarding transfer of training.

Miss Rogers draws the following conclusions to bring about improvement in the teaching of mathematics:

a) A proper attitude is to be cultivated in the pupil.

b) More attention is to be focused on the art of learning and the methods of procedure in solving problems.

c) Attention is to be directed to related ideas in order that as many as possible be recalled.

d) Motivation should be secured and attention should be kept at a high level.

8. "School Mathematics and War." By G. A. Miller. *School and Society*, October 21, 1916.

The purpose of the article is to show the usefulness of mathematics to the soldier.

9. *Problems of Secondary Education.* By David Snedden. Houghton Mifflin Co.

Mr. Snedden's views and criticisms are widely known and have aroused a great deal of discussion, partly because they are of the constructive type. Every teacher of high-school mathematics should be familiar with the chapter in this book which deals with mathematics.

IMPROVEMENT OF METHODS

1. "Supervised-Study Plan." By Carl H. Nielson. *School Review*, March, 1917.

The principal features of the plan are, first, special conferences of pupils who have fallen behind with the instructor; secondly, teaching of the group as a whole how to study.

2. "Teaching Pupils to Study." By F. W. Johnson. *School Review*, November, 1916.

An appeal to teachers to make careful studies of the teaching process and to publish the methods used and the results.

3. "Supervised Study in the Everett High School." By Alexander C. Roberts. *School Review*, December, 1916.

4. "Results of Supervised Study in the Houghton, Michigan, High School." By John E. Erickson. *School Review*, December, 1916.

5. "Supervised Study." *School Review*, October, 1916.

This article gives a list of schools experimenting in supervised study.

6. "A University How to Study Class." By Herbert G. Lull. *School and Society*, December, 1916.

A plan is described which aims to develop the study habit of a class of college students taking a course in civil engineering. The article contains many points of value to the teacher of high-school mathematics.

7. "Supervised Study." By Thomas R. Cole. *School Review*, May, 1917.

8. "Supervised Study." By I. M. Allen. *School Review*, June, 1917.

9. *How to Study Effectively.* By G. M. Whipple. Public School Publishing Company, Bloomington, Indiana.

This little book gives valuable directions in teaching effective methods of study.

ARRANGEMENT OF THE CONTENT OF A COURSE IN HIGH-SCHOOL MATHEMATICS

1. "Unification of Mathematics in the High School." By W. D. Reeve. *School and Society*, August 5, 1916.

It is argued that unifying of high-school mathematics may help to settle many of the controversies that have arisen.

2. "Unification of Mathematics in the High School." By H. C. Wright. *School and Society*, October 7, 1916.

This article contains definite references to experiments in unification. The economy of the plan is emphasized. It is suggested that courses offered in schools of education give opportunity for better training of teachers.

3. "Report of the Committee on Geometry." By E. R. Breslich, Ernest B. Lytle, and Irwin M. Miller. *School and Society*, January 13, 1917.

An outline of a course in geometry beginning in the elementary school and continued through the high school.

4. "A Course of Study in Secondary Mathematics in the University High School." By E. R. Breslich, Raleigh Schorling, Horace C. Wright, and Harry N. Irwin. *School Review*, November, 1916.

An outline of the aims, values, and content of the course in mathematics given in the University High School.

5. "Administrative Aspects of the High School." By Franklin W. Johnson. *Education*, June, 1917.

Principal Johnson suggests that the requirement for formal algebra and geometry give place to a single year devoted to the study of the essential number and space relationships of algebra, geometry, and trigonometry, built upon a mastery of the essentials of arithmetic.

6. "The Content of a Mathematical Course for the Junior High School." By F. W. Gentleman. *The Mathematics Teacher*, June, 1917.

The writer advocates for the first year a review of the fundamental operations of arithmetic, some very simple algebra, and mensuration; for the second year, a review of arithmetic, formulas, percentage, geometric constructions, and simple equations in one or two unknowns; for the third year, a review of arithmetic, formulas, linear equations, factoring, quadratic equations, an introduction to a systematic study of the theorems of geometry.

7. "Possibilities of the Junior High School." By Thomas H. Briggs. *Education*, January, 1917.

It is proposed that mathematics, instead of being confined to the higher reaches of arithmetic, should concern the general applications of arithmetic and introduce the more practical elements of algebra, constructive geometry, and even trigonometry.

8. "Mathematics in the Junior High School." By David Eugene Smith. *Educational Review*, April, 1917.

This article recommends a systematic and topical arrangement of arithmetic, constructive geometry, formulas, elementary algebra, and formal algebra.

9. "College-Entrance Mathematics." By George V. Dearborn. *School and Society*, October, 1916.

The question of the usefulness of algebra is raised in connection with the discussion of the mathematical requirements of the College-Entrance Examination Board.

10. "Tests and Examinations." By H. T. Terry. *School and Society*, October 28, 1916.

Suggestions are made for the changes in the nature and methods of examinations.

MEANS OF DEVELOPING SKILL IN MATHEMATICS

1. "Standardized Tests and the Improvement of Teaching in First-Year Algebra." By H. O. Rugg and J. R. Clark. *School Review*, May, 1917.

The authors have worked out a number of standardized tests for the fundamental operations of first-year algebra. They hope that the efforts to establish standards will have considerable effect upon the teaching of algebra and that the standardized tests will serve as a device for the improvement of teaching this subject.

2. *Standardized Practice Exercises in First-Year Algebra.* By H. O. Rugg and J. R. Clark, Chicago, Illinois.

These tests will serve as a device for improving such fundamental processes of algebra as collecting terms, solution of simple equations, substitution, removal of parentheses, subtraction, manipulation of exponents, finding special products, factoring, solving quadratic equations, clearing of fractions, solving simultaneous equations, and simplifying radicals. The tests are so arranged that a student can easily grade his own or another student's paper.

3. *Geometry Tests.* By J. Minnick, University of Pennsylvania.

Mr. Minnick has sent copies of his tests to a number of schools for trial. So far as the writer knows, he has not published his results.

MEANS OF AROUSING GREATER INTEREST IN THE STUDY OF MATHEMATICS

In *School Science and Mathematics* we find a number of brief articles dealing with this question. Many of these articles contain simple reading matter which a high-school pupil may study with profit. They make excellent material for reports to a class or to a mathematics club. Such use of these articles is to be recommended.

1. "A Mathematical Victory, A Play in Two Acts." By The Mathematics Club of the Los Angeles State Normal School of California. *School Science and Mathematics*, June, 1917.

2. "History and Use of Mathematical Textbooks." By G. A. Miller. *School and Society*, December 16, 1916.

Students are advised to broaden their mathematical notions by reading articles relating to the subject. Historical notes are said to intensify the pupils' interest.

3. "A Mathematical Contest." By Edgar T. Boughes. *School Science and Mathematics*, April, 1917.

This contest was arranged between pupils of the Manual Arts High School of Los Angeles and the Pasadena High School.

4. "Mathematics Contests." By Ernest H. Koch. *Mathematics Teacher*, June, 1917.

5. "Mathematics Clubs." By Louise Webster. *Mathematics Teacher*, June, 1917.

6. "The Half-Angle Formula Derived by Line Values." By G. W. Armstrong. *School Science and Mathematics*, April, 1917.

7. "The Use of the Radical Symbol." By G. A. Miller. *The Mathematics Teacher*, March, 1917.

NEW TEXTBOOKS

1. First Course in Algebra. By Herbert E. Hawkes, William A. Luby, and Frank C. Touton. Ginn & Co. Pp. ix+301.

A revision of the *First Course in Algebra*. It differs from the older edition in omitting such topics as "Highest Common Factor" and "Least Common Multiple." It also contains many new problems and exercises. New ideas and operations are usually introduced with sets of oral exercises. It is aimed to present the subject with greater simplicity than the older text.

2. *Elementary Algebra*. By Elmer Lyman and Albertus Darnell. American Book Company. Pp. vii+503.

The authors aim to secure simplicity by omitting unduly puzzling exercises and non-essentials, at the same time satisfying the requirements of the College-Entrance Examination Board. The book contains considerable correlation with arithmetic.

3. *Elementary Algebra*. By George William Myers and George E. Atwood. Scott, Foresman & Co. Pp. 338.

A clear and simplified treatment of a first-year course in algebra. A book which the pupil should be able to read and understand. The practical value of algebra is emphasized. An important feature of the book are the frequent reviews and numerous practice exercises.

4. *Complete Algebra*. By H. E. Slaught and N. J. Lennes. Allyn & Bacon. In two parts. Pp. x+373 and pp. v+256, respectively.

The authors follow the traditional course in algebra, aiming to present the subject in a simple manner. The book contains a large number of illustrative examples, review exercises, and lists of problems taken from college-entrance examinations. Historical notes and portraits of mathematicians add to the interest of the student.

5. *Plane Geometry*. By Durell and Arnold. Charles E. Merrill Co. Pp. 300.

An improvement in the methods of teaching pupils to solve original exercises. The number of propositions is reduced and corresponds closely to the Harvard *Syllabus* and to the report of the Committee of Fifteen. The theory of limits and incommensurable cases are omitted.

6. *Plane and Solid Geometry.* By John C. Stone and James F. Millis. Benjamin Sanborn & Co. Pp. x+448.

A revision of the older plane and solid geometry. The principal aims of the book are simplicity of presentation and emphasis upon practical problems.

7. *Plane and Solid Geometry.* By William Betz and Harrison E. Webb. Ginn & Co. Pp. xi+507.

An exceedingly attractive book, which should be found on every teacher's desk.

8. *First-Year Mathematics.* By George W. Evans and J. A. Marsh. Charles E. Merrill Co. Pp. 253.

As the title indicates the course contains more than algebra, including a considerable amount of geometry. Many concrete problems may be found in the book.

9. *Introduction to Mathematics.* By Robert L. Short and William H. Elson. D. C. Heath & Co. Pp. viii+210.

A correlation of arithmetic, algebra, and straight-line geometry. The book contains a large number of applied problems.

10. *Second-Year Mathematics.* By E. R. Breslich. The University of Chicago Press. Pp. xx+348.

This is the second of the series of textbooks on secondary mathematics designed as a second unit of a year's work and following the first course worked out by the author in *First-Year Mathematics.* It completes the study of plane geometry, continues the study of algebra and solid geometry, and begins trigonometry.

11. *Plane Geometry.* Edith Long and W. C. Brenke. Century Co. Pp. vii+276.

The practical side of geometry is emphasized. The introduction of the trigonometric functions in the chapter on ratio and proportion and of numerous geometric exercises to be solved algebraically is a step in the direction of correlated mathematics.

II. BOOKNOTES AND REVIEWS

TRYON, R. M. *Household Manufactures in the United States, 1640 to 1830:* A Study in Industrial History. Chicago: The University of Chicago Press. Pp. 412. $2.00.

Professor Tryon affirms that a history of any special phase of the life of a people, to be of value, should not be treated in isolation from the various other phases of that people's life. In presenting *Household Manufactures in the*

United States, 1640 to 1830, the author has indicated clearly the relation of household manufactures to the social, political, and general industrial life of the people.

The book consists of eight chapters. The introduction discusses the scope, importance of the subject, and the connection with present-day problems. In chap. ii the factors affecting household manufactures in the colonies show how England's colonial policy was answered by the colonists when they turned to manufacturing in the home. Chapter iii indicates the status of manufactures in the colonies, and chap. iv is devoted to a quarter-century of developments in which the dominant factor in the struggle for industrial independence from 1784 to 1809 is manufacturing in the homes. A year's output of the family factory and the products of the family factory are treated in chaps. v and vi. The transition from family to shop and the passing of the family factory conclude the discussion in the last two chapters.

The author has used extensively the census returns, reports of the treasury department, and the records of many state and local historical societies in the choice and selection of his material. A splendid feature of the book is nineteen tables, copious footnotes, and a workable bibliography.

The book is a valuable contribution as a text in secondary and normal schools and in colleges where courses in industrial history, home economics, and household arts are given. Its reliable information recommends it to all teachers and students of American history.

The variety of topics that Professor Tryon discusses being considered, it seems extraordinary that he has been able to confine his treatment to one volume. This he has done because of the method of his treatment, which has been both topical and chronological. The book answers a long-felt need in the field of industrial history and merits the thoughtful consideration of all school authorities and teachers of history.

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WOOD, CLARENCE A. *School and College Credit for Outside Bible Study*. World Book Co., 1917. $1.50.

A custom that has gained widespread recognition in the past few years is that of giving school credit for outside work. Among the many studies commonly pursued outside of the public school is the study of the Bible. Those interested in this special phase of the general movement will find much of value and interest in Mr. Wood's consideration of the topic, in which is a body of material of great practical value. Besides a summary of the present status of the movement to grant college, high- and elementary-school credit for outside Bible study, the book contains plans and suggestions for the future of such work as well as a number of syllabi in actual use.

Since the author discusses the plan of giving credit for outside Bible study as it is now applied in higher, secondary, and elementary education, his book should be of interest to a rather large audience. In discussing the adaptation of the plan, the country is considered in sections, such as the central, the western, the Atlantic, and the southern states. In these groups individual states are usually treated separately, thus giving the reader an opportunity to view the situation in the concrete.

The Gary, Indiana, the Greeley, Colorado, the Austin, Texas, and the North Dakota plans are presented in considerable detail. The appendix contains the following syllabi: North Dakota, Colorado, Oregon, and Virginia. Thus it will be seen that to the one desiring a knowledge of the present status of the movement to give credit for outside Bible study and suggestions for inaugurating or improving such work the book will be of great value. It certainly contains an excellent résumé of the best that is now done in this important field.

SCOTT, J. F. *Patriots in the Making.* New York: D. Appleton & Co., 1916.

Professor Scott has written a valuable book both for the student of the history of modern European education and the teacher of American history. The subtitle of his book is *What America Can Learn from France and Germany*, which is more suggestive of what the book really contains than the main title, as the following list of chapter headings shows: "French Education as National Self-Expression," "Molding the Psychology of Defense," "The Inculcation of Hostility toward Germany," "The Teaching of Loyalty to the Republic," "Concluding Forces in French Education," "Patriotism in German Education," "The Lesson for America," and "Military Training in Europe."

To the student of the history of modern European education who desires to see how the educational systems of France and Germany have contributed to the inculcation of the spirit of patriotism in the growing youths of these nations, the first six chapters of this book will be of great value. This fact should be especially emphasized, since from its title one would not suspect the book contained so much in the field of the history of education. The chapter on "The Lesson for America" contains much of value to the teacher of American history. While one might not agree with all of the author's proposals relative to the teaching of patriotism, yet the chapter contains many suggestions of value. For example, the criticism of our texts in American history because of their tendency to overglorify certain events in our history is certainly justified. There is also need of having the attention of history teachers called to the fact that these same texts tend to create a spirit of hatred for England. This is done very effectively by the author. The book will doubtless be read with interest by the lay reader, since the style is free and easy and the organization clear and compact.

KIRKPATRICK, M. G. *The Rural School from Within.* Philadelphia: J. B. Lippincott Co., 1917.

This adds another to the rapidly growing list of books that deal with the rural school from one angle or another. Its title is unique and suggestive, and its chapter headings include "Living up to Reputation," "Onward Christian Soldiers," "In Loco Parentis," "Bossing One's Employer," "Managing Girls," etc.

There is nothing vitally new in the book except the style of presentation, which is autobiographical. The fundamental propositions which it presents are thus embodied in a form that should secure an audience from young people who are preparing for teaching, particularly in rural schools. It recounts incidents and describes customs and practices formerly common in rural communities. It makes these the medium through which to present modes of treatment of boys and girls of school age. To the young rural teacher it suggests ways of getting a better rural community interest. The "suggested improvements" include nothing new, but serve to impress these things on the beginning teacher.

On the whole the spirit and tone of the book is sane and helpful and will help to inspire those who sincerely desire to render service to country people.

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RICHARDSON, ROBERT P., AND LANDIS, EDWARD H. *Fundamental Conceptions of Modern Mathematics. Variables and Quantities with a Discussion of the General Functional Relation.* Chicago and London: Open Court Publishing Co., 1916. Pp. xxi+216.

The book before us is one of a projected series of thirteen upon the general subject of fundamental conceptions of mathematics and bears the subtitle *Variables and Quantities.* It consists of a preface in which the authors express both their contempt and their pity for the weaknesses of mathematics and for certain schools of philosophers; one chapter of 169 pages on "Variables and Quantities"; and one chapter of 29 pages on "The General Conception of the Functional Relation."

To the mathematician seeking a constructive criticism of his own science from the standpoint of philosophy, and to the philosopher seeking a rational account of the "science of self-evident things" in terms of the broader concepts of philosophy, the book will prove a disappointment. The authors profess to find the keynote of their work in "the distinction we find it necessary to make between quantities, values, and variables on the one hand, and between symbols and the quantities they represent on the other." They especially deplore the confusion they seem to find between symbols and the quantities they represent and the alleged tendency on the part of certain mathematicians to make mathematics entirely a matter of symbolism.

Apparently the authors would make vectors and relations the entities which lie behind the algebraic symbols, though this is by no means clear. From the standpoint of the mathematician such a view is wholly untenable. They speak, for example, of the *geometric* representation of an ordinary complex number. It is wholly immaterial whether this representation consists of a broken line drawn from the "origin," to a point, or of a directed straight line drawn from the origin to the same point, or of the point itself. It is the pair of numbers which enables him to locate the point that interests him. For many purposes it is better to represent complex numbers upon the surface of a sphere rather than upon the so-called Argand plane, or upon a "Riemann surface" which has no particular shape and may be deformed at will, subject to certain definite restrictions. The ordinary Argand representation of complex numbers rests essentially upon a co-ordinate system. Co-ordinate systems, important as they are, are mere scaffolds by means of which the building itself is to be erected. It is not the relation of a curve to a particular co-ordinate system that interests us most, but the properties of the curve that are independent of all co-ordinate systems. Euler and Demoivre gave us an almost complete theory of ordinary complex numbers nearly a hundred years before the geometric representation was discovered by Argand and Gauss. Moreover, geometric representation is impossible for complex numbers with more than three independent units.

In various places (pp. 31, 40, 41) they speak of quaternions as "applicate" or denominate quantities; but on p. 46 they say: "It is by no means superfluous for us to insist that a quarternion is nothing more or less than an abstract quantity." They take issue with Hamilton and Cayley in their assertions that i, j, and k of Hamilton's quaternion theory are wholly distinct from the i or ordinary complex numbers, but on p. 135 they give explicit formulas showing that the "old and ordinary imaginary symbol of common algebra," as Hamilton termed it, satisfies the commutative law for multiplication when combined with the i, j, and k, which is not true of these numbers themselves.

Rejecting Hamilton's definition of a quaternion as the quotient of two vectors, the authors define it as a "relation," saying that they do not "regard a ratio or a quotient as a relation." "Though it is true that each relational quantity may on occasion be a ratio or a quotient, it need not necessarily be so; a relational quantity may exist for millions and millions of years and never be chosen for such a rôle."

In a book which has for its avowed purpose the criticism of current definitions relating to variables and functions, the reader has a reasonable right to expect that some attempt at a constructive definition of a variable shall be made. Instead, we read on p. 155: "Any attempt to give a precise definition of the term variable would require a somewhat lengthy consideration of the philosophical theory of categories, which cannot be given in this place." Following this declaration is a brief statement of the relation existing between

the various schools of philosophy, in the course of which we are told that the authors uphold the more extreme form of expiricism, which they denote "provisionally" by the title nominalism. For the mathematician who believes that any attempt to interpret mathematics in the light of a particular philosophical doctrine is probably foredoomed to failure, this fact might easily be made to account for some, though by no means all, of the vagaries of the book.

Both from the standpoint of mathematics and of philosophy the publication of such a book is distinctly unfortunate, and it is sincerely to be hoped that the publishers may take the necessary steps adequately to inform themselves concerning the character of any future volumes of the projected series that may be offered before giving them to the public.

Koos, L. V. *The Administration of Secondary-School Units.* Chicago: The University of Chicago Press, 1917. Pp. 294. $1.00.

In this monograph of 194 pages Dr. Koos "presents, largely from the view of the Educational Administration, the results of an investigation into the status of the teaching of almost all subjects appearing in the secondary-school program of study." The data for the study were collected for the use of the Committee on Reorganization of the Secondary School and the Definition of the Unit of the North Central Association of Colleges and Secondary Schools.

The subjects included in the report are Latin; Greek; German; French; Spanish; algebra; geometry; trigonometry; general science; physiography; botany; zoölogy; biology; chemistry; physics; agriculture; ancient, mediaeval and modern, English, and American history; civics; economics; manual training; home economics and household art; commercial subjects; art; music; and public speaking. These subjects are grouped and discussed under the following heads: "Foreign Languages," "Mathematics," "Science," "History and Other Social Studies," "The Vocational Subjects," "The Fine Arts," and "Public Speaking." Such topics as extent of the offering, methods, aims, and organization are discussed in their application to each of the foregoing subjects.

The questionnaire method was used in collecting the data for the study. It should be said, however, that Dr. Koos's precautions relative to the selection of individuals to make reports and the formulation of the questions saved the study from the usual pitfalls of a report of this type. It is not too much to say of the monograph that it is a model study based on material collected by the questionnaire method. It will certainly prove of great practical value to high-school teachers and administrators and to persons anticipating a similar study by the same method.

GEHRS, J. H. *Productive Agriculture.* Chicago: Macmillan, 1917. Pp. 436. $1.00.

The purpose of this book is to meet the need and the demand for a text that will standardize seventh- and eighth-grade agriculture. Little or no attention is given to such topics as origin, history, and the importance of farm crops and animals. Topics relating to *productive agriculture* and not topics *about* agriculture are given chief consideration. Such topics as how to produce larger yields, use of more prolific varieties, the use of high-grade or pure-bred stock, how to feed well and economically, how to combat enemies, and how to choose, plan, and manage a farm are the topics with which the work deals.

Specifically speaking, the book contains a section of from four to eight chapters in length on each of the following big topics: "Farm Crops," "Animal Husbandry," "Soils," "Horticulture," and "Farm Management." There is also a brief bibliography of material relating to each of these large topics. The laboratory exercises at the end of each chapter are very practical and can be done with a minimum amount of schoolroom equipment, the farm itself furnishing the requisite laboratory. Anyone interested in texts in agriculture adapted to grades seven and eight or to the junior high school will be well paid for the time and effort required to give this book a careful consideration.

ASHLEY, R. L. *The New Civics: A Textbook for Secondary Schools.* Chicago: Macmillan, 1917. Pp. 420. $1.25.

The contents of this book justify its name—*The New Civics.* Part I is devoted to the topic, "The Citizen and Society," and contains chapters on citizenship, the education of the citizen, the American nation, civic organization, and the American home and family. Part II deals with "Government and the Citizen" and is made up of a chapter on each of the following topics: suffrage and elections, other means of popular control, civil liberty and public welfare, public finance, city government, state and country government, the national constitution, and the national government. Six chapters on the general topic, "Some Public Activities," compose the third and last part of the book. Public health and welfare, labor and industry, commerce, other business activities, territories and public land, and foreign relations are the subjects considered in this part. The appendix, among other things, contains an outline of a course on civic problems. Since this is the outline of a course Mr. Ashley actually gives, it is of more value than a purely theoretical one.

From the standpoint of teaching aids the book has much to commend it. At the end of each chapter there is a list of general references on the material considered in the chapter, a series of topics for special consideration with exact references on each, a group of studies which contain material for brief daily reports, and, finally, a number of questions based, for the most part, on the text. Besides the foregoing aids the book contains some sixty-four

well-selected illustrations and eight maps and charts. Furthermore, each chapter is divided into a number of large divisions, each one of which is divided, the division in this case being indicated both by numbers and bold-face type. There is also an abundance of marginal notes as well as footnotes. On the whole the book is a decided improvement over the traditional text on civics.

POWELL, SOPHY H. *The Children's Library.* New York: The H. W. Wilson Co., 1917. $1.75.

There seems to be an urgent need at the present time for a closer relation and a more systematic co-operation between the public library and public education. While the two institutions grew up rather independently of each other, there has recently arisen the feeling that they are both working toward a common goal, namely, the education of the public. The book under review will do much to unify the work of the public school and the public library. Such topics as the following are discussed: the place of books in education, early libraries for children, the elementary- and high-school libraries, library resources of country children, public-library relations with public schools, the public library an integral part of public education, the children's room, the children's librarian and her training, aids to library work with children, book selection, and some social aspects of library work with children. An elaborate bibliography of the material relating to each of these topics is included. The book is certain to find an important place in all libraries as a general-reference book and as a text in library-training schools.

III. PUBLICATIONS RECEIVED

(Detailed discussions of some of the following books will appear later.)

ANDERSON, MABEL L. *A Study of Virgil's Description of Nature.* Boston: Richard G. Badger, 1916. Pp. 224. $1.25.

BAILEY, CAROLYN S. *For the Children's Hour.* Books II and III. Chicago: Milton Bradley Co., 1917. Pp. 116.

Contains supplementary reading material adapted to grades two, three, and four.

BENNETT, C. A. *The Manual Arts.* Peoria, Ill.: Manual Arts Press, 1917. Pp. 116. $1.00.

A brief discussion of the selection and organization of subject-matter and the methods of teaching manual arts. Several chapters have previously appeared in magazines.

CORCORAN, REV. T. *State Policy in Irish Education.* New York: Longmans, Green, & Co., 1916. Cloth. 8vo, pp. 235. $2.00.

CRESWELL, JOHN BAXTER. *Bible and Mission Stories.* Boston: Gorham Press, 1916. Cloth. 12mo, pp. 145. $1.00.

EVANS, LAWTON B. *Worth While Stories for Every Day.* Chicago: Milton Bradley Co., 1917. Pp. 424.

FALES, JANE. *Dressmaking.* New York: Scribner, 1917. Pp. 508.
A text for colleges and schools above the elementary.

FLETCHER, MABEL E. *Old Settler Stories.* Chicago: Macmillan, 1917. Pp. 193.
A book in the "Every Child's Series." Contains stories of pioneer life in the Middle West during the thirties and forties.

FORD, J. D. M., and HILLS, E. C. *First Spanish Course.* Chicago: D. C. Heath & Co., 1917. Pp. 327. $1.25.

FRANK, LUDWIG. *Essentials of Mechanical Drawing.* Chicago: Milton Bradley Co., 1917. Pp. 132.
A manual for students arranged for reference and study in connection with courses in manual-training, industrial high, and technical schools.

GATES, H. W. *Recreation and the Church.* Chicago: The University of Chicago Press, 1917. Cloth. Pp. xi+185. $1.00.

HAMLIN, G. S. *Human Nature.* New York: The Knickerbocker Press, 1917. Pp. 213.
A series of essays on the following subjects: "The Soul," "Death," "Approbation," "Art," "Education," "Necessity," "Understanding," and "Justice."

HANCOCK, JOHN L. *Studies in Stichomythia.* Chicago: The University of Chicago Press, 1917. Paper. Royal 8vo, pp. v+97. $0.75.

HERVEY, W. L., and HIX, MELVIN. *Introductory Third Reader* and *Introductory Fourth Reader.* New York: Longmans, Green, & Co., 1916 and 1917. Pp. 274 and 314. $0.50 and $0.56.

HOSIC, JAMES F., and HOOPER, CYRUS L. *A Child's Composition Book,* also *A Composition Grammar.* Chicago: Rand McNally & Co., 1916. Pp. 281 and 296. $0.50 and $0.60.

Indian Education in 1915-16. Government of India, Bureau of Education. Calcutta: Superintendent Government Printing, India, 1917.

KIRKPATRICK, M. G. *The Rural School from Within.* Philadelphia: J. B. Lippincott Co., 1917. Pp. 303.

KOOS, L. W. *The Administration of Secondary-School Units.* Chicago: The University of Chicago Press. 1917. Pp. 194. $1.00.

LARSON, W. E. *Wisconsin County Training Schools for Teachers in Rural Schools.* Department of the Interior, Bureau of Education, Bulletin No. 17, 1916.

LIEBNITZ, W. G. *New Essays concerning Understanding.* Trans. by A. G. Langley. (2d. ed.) Chicago: Open Court Publishing Co., 1916. Pp. 861+xiv.

LUTKENHAUS, ANNA M., and KNOX, MARGARET. *Story and Play Readers.* Vols. I, II, and III for grades six, seven, and eight. New York: Century Co., 1917. $0.60 a volume.

MORREY, C. B. *The Fundamentals of Bacteriology.* Philadelphia: Lea and Febiger, 1917. Pp. 289. $3.00.

A text intended to cover an introductory semester's work.

NELSON, RALPH W. *Hattie Elizabeth Lewis Memorial. Essays in Applied Christianity. How Christ Would Organize the World.* Published by the University of Kansas, 1917. Pp. 32.

ROBERTS, A. W., and ROLFE, J. C. *Cicero.* New York: Scribner, 1917.

ROBESON, F. E. *A Progressive Course of Precise Writing.* New York: Oxford University Press, 1917.

Aims to present the leading features of what is described in a number of original documents.

SMITH, A. *The New Barnes Problem Books for Grade Seven.* New York: A. S. Barnes Co., 1917. In two books. Pp. 61 and 70. $0.10 each.

The two books contain 140 carefully graded lessons of about ten problems each, grouped in a way to tell a story. Might serve as a teacher's "term plan."

TAYLOR, JOSEPH S. *Duplicate Schools in the Bronx.* New York: Published by the Board of Education, 1916.

THAMIN, R. *L'Université et la guerre.* Paris: Librairie Hatchette et Cie, 1916.

THWING, CHARLES F. *Education according to Some Modern Masters.* New York: Platt & Peck Co., 1916. Pp. 296. $2.00.

A literary discussion of educational sources.

VAN DEUSEN, C. *Demonstration in Woodwork.* Peoria, Ill.: Manual Arts Press. $1.15.

The book represents a plan to be followed by students who wish to learn the fundamentals of woodworking, but who have no opportunity to receive continuous instruction from one especially prepared to give it. The book is particularly valuable for rural schools.

Webster's Collegiate Dictionary. Springfield, Mass.: G. & C. Merriam Company, 1917. Pp. 1224.

Webster's Collegiate Dictionary, 3d ed., is the largest abridgment of *Webster's New International.* It contains most of the essentials of the larger work and was prepared under the same editorial supervision. The thin-paper edition de luxe is printed on Bible paper, which was especially made to combine the qualities of opacity,

body, strength, and an excellent printing surface, with requisite thinness. The result is a convenient volume one-half the bulk of the edition on regular book paper. The book is complete enough for the average student and yet small enough to find a place upon the writing table or business desk.

WEEKS, A. D. *The Avoidance of Fires.* Chicago: D. C. Heath & Co., 1916. Pp. 128.

A textbook on fire prevention. Aims to create a mental attitude as well as to impart knowledge. Could be used in supplementary work in civics, arithmetic, elementary science, physics, or language.

WELLS, F. L. *Mental Adjustments.* New York: D. Appleton & Co., 1917. Pp. 331. $2.50.

WIER, M. C. (translator). *The Prometheus Bound of Aeschylus.* New York: Century Co., 1916. $0.65.

WILKINS, A., and LIMA, M. A. *Lecturas Faciles.* Boston: Silver, Burdett & Co., 1916. Pp. 256.

Lecturas Faciles is a practical reader and grammar with interesting illustrations. The selections are of popular character rather than of the literary type, as is usual in most readers. The volume provides everyday idiomatic Spanish stories that are simple, yet not childish, that can be readily appreciated by the beginner. The book is intended for use in the second and third semesters in high school, or in the first and second semesters of college. Part I is based chiefly upon the *Libro Segundo de Lectura* and *Libro Tercero de Lectura* of the series published by Silver, Burdett & Co. Part II provides in Spanish interesting information about Latin-American countries. The articles upon Argentina, Brazil, Cuenca, Costa Rica, and Peru are adapted from articles appearing in the publications of the Pan-American Union.

Wisconsin Teachers' and Young People's Reading Circles, 1916–17. State Reading Circle Board.

Very pleasing plan for directing reading of pupils and teachers.